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There is little justification for research activities unless some plan is formulated to utilize their results. Consequently, a conference comprising representatives of rehabilitation agencies in the Southeast was held during June, 1968 to review ways and means of disseminating, retrieving, and utilizing research and demonstration results. The topics discussed included: information storage and retrieval procedures, activities of the Social and Rehabilitation Service, Research and Demonstration Grant applications, and Operations Research techniques. Two group sessions were also held to gather the suggestions of people who face these problems every day. (Author)

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RESEARCH UTILIZATION AND DISSEMINATION

PROCEEDINGS OF A REGIONAL CONFERENCE

Edited by NEIL S. DUMAS, Ph.D.
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ABSTRACT

There is little justification for research activities unless some plan is formulated to utilize their results. Consequently, a Conference comprising representatives of rehabilitation agencies in the Southeast was held during June 1968 to review ways and means of disseminating, retrieving, and utilizing research and demonstration results. The topics discussed included: information storage and retrieval procedures, activities of the Social and Rehabilitation Service, R & D Grant applications and Operations Research techniques. Two group sessions were also held to gather the suggestions of people who face these problems every day.

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PREFACE

The staff of the University of Florida Regional Rehabilitation Research Institute appreciated the opportunity to conduct a research utilization conference for the state agency personnel in Region IV. It was timely in that it was planned just as the SRS Division of Research and Demonstration Projects was activating a Research Utilization Branch. Furthermore, it enabled the newly appointed staff of the UFRRI to get acquainted with state Vocational Rehabilitation Agency leadership in Region IV. Dr. Neil S. Dumas and I appreciated the opportunity to meet with this group to discuss an important problem area.

Because the need for more effective utilization of research is a pressing problem throughout the field of rehabilitation and the Social and Rehabilitation Service of the U.S. Department of Health, Education and Welfare is committed to increased efforts to enhance research use, the conference was held and these proceedings prepared. We hope that public and private vocational rehabilitation agencies find it useful and stimulating. Other regional and state groups will be able to use these proceedings as background information for their own research utilization conference. Although we hope that such uses will occur, we will be satisfied to have conducted the conference and prepared these proceedings if the readers react to the contents as favorably as did those who attended the sessions.

Without the substantial assistance and advice of the Rehabilitation Services Administration Region IV staff, this conference could not have been held. We are especially grateful for the help given by Glenn Calmes who helped substantially with both the program planning and the local arrangements. The counsel of Louis Schubert, Dr. Edward N. Holmes, and Shelton McClelland also contributed to the success of the meeting. The SRS Research and Demonstration Division staff not only made the meetings possible, but assisted substantially in planning the program. Bertrum W. Griffis and N. Edward Acree of SRS were especially helpful.

Conference proceedings which are developed from tape recorded materials rather than manuscripts are difficult and even a bit messy to prepare for publication. Each of the contributors were most cooperative in responding to our requests for editorial changes to their papers as taken from tape; we appreciate their cooperation. We would like to note, at this point, that all of the material in this report was not formally delivered during the presentations. The editors felt that it was more important to include afterthoughts and further developments than to adhere to the literal text as delivered during the short time allotted each speaker. In this way, we hoped to improve the usefulness of the proceedings for those who did not attend the conference as well as for those who did. I particularly wish to thank Miss Darcy Meeker for her careful and arduous work assisting Dr. Dumas in preparing this report.

John E. Muthard, Ph.D.
Conference Director
September, 1968

REGIONAL CONFERENCE ON

RESEARCH UTILIZATION AND DISSEMINATION

A Regional Conference Sponsored by
the Social and Rehabilitation Service and
the University of Florida
Regional Rehabilitation Research Institute

Atlanta, Georgia, June 6 - 7, 1968

Thursday, June 6

8:30 a.m.	Registration
9:00 a.m.	Opening Remarks
	McLelland, Shelton W. Associate Regional Commissioner Social and Rehabilitation Service Region IV
9:30 a.m.	"Information Retrieval and Utilization: Current Practices and the State of the Art"
	Dumas, Neil S., Ph.D. Regional Rehabilitation Research Institute, University of Florida
11:00 a.m.	"The Use of Rehabilitation KWIC Indexes and a Coordinate Indexing Procedure for Information Retrieval"
	Muthard, John E., Ph.D. Regional Rehabilitation Research Institute, University of Florida

11:00 a.m. Lunch

1:15 p.m. "Techniques for Promoting the use of
Research and Demonstration results"

Workshop Discussion

3:15 p.m. "The SRS Research Utilization Program"

Griffis, Bertrum W.
Research Utilization Branch,
Social and Rehabilitation Service

General Discussion

Friday, June 7

8:30 a.m. "Operations Research in State Vocational Rehabilitation Agencies:
Its State and Potential"

Wyckoff, Ben., Ph.D.
Georgia Vocational Rehabilitation

Chandler, Charles.S., Ph.D.
South Carolina Department of
vocational Rehabilitation

9:30 a.m. "Considerations in the Preparation
of R & D Grant Applications"

Holmes, Edward M., M.D.
Regional Office, Atlanta, Georgia
Institute, University of Florida

Muthard, J.E., Ph.D.

11:00 a.m. Summary

Research Utilization Sessions
Researchable Problems Sessions

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OPENING REMARKS

Shelton W. McLelland
Associate Regional Commissioner
Social and Rehabilitation Service
Region IV

It is a real pleasure for us in the Regional Office of Rehabilitation Services Administration to work with representatives from the University of Florida and with you who are participants in this Conference on the Utilization of Research in Rehabilitation.

This is really not the first time that we have made an effort to use some of the findings from various Research and Demonstration Projects. Several of you attended a meeting in Region IV at which time we talked, not so much about utilization, but more about the needs of Rehabilitation agencies in terms of Research and Demonstration activities. We looked at some problems that need to be researched, and how the State VR Agencies can use colleges and universities in finding solutions to some of these problems. In addition, a couple of years ago a National meeting was held in Miami to explore better ways for utilizing Research and Demonstration Project findings. So we are glad that you came and are interested in working on this very important aspect of our program.

We certainly need to find out more about how to utilize research in improving services for handicapped people. We hope this session will make a contribution in that direction.

I should now like to introduce John Muthard of University of Florida Regional Rehabilitation Research Institute, who is our host and the Conference Director. I am certainly enjoying working with John Muthard who came to us last September from Region IV. He was out in the Kansas City Region for several years and I suppose did about all the work that he could do there, so he decided to pull up stakes and help the Atlanta Region catch up with the work here. Most of you have known John through personal acquaintance and others through his writings. He has been interested in the Rehabilitation Program for many years, and we appreciate his efforts.

INFORMATION RETRIEVAL: A STATE-OF-THE-ART REPORT FOR REHABILITATION PERSONNEL

NEIL S. DUMAS, PH.D.

DR. MUTHARD:

Our first speaker has just finished a post-doctoral fellowship under SRS sponsorship at the University of Wisconsin. During this past year, he has spent a great deal of time studying, not only information retrieval and utilization, but also Operations Research as it affects the Social and Rehabilitation Service and its agencies. Dr. Dumas has his Doctorate in counseling with specialization in rehabilitation from the University of Wisconsin. He has, also, after spending the several years in the cold upper Midwest, decided to come to Florida, although he claims that it has nothing to do with the climate. He just likes the nice people of Florida. He will talk about information retrieval and utilization, current practices and the state of the art.

DR. DUMAS:

Thank you very much John. Ladies and gentlemen, I am very pleased to be here and have the opportunity to speak to you. I must confess, however, that I'd be rather on the other end listening to your problems. In my line of work, there's nothing for me to do unless I can get an interesting problem to solve.

Since this is a report for rehabilitation personnel, the material I will review is of the non-technical variety and covers those aspects of the information retrieval-utilization problem that are most likely to be of concern to you. I will try to review some of the current answers to the following problems:

1. Do we really want an information system?
2. If so, what's holding up its development?
3. What kind of data would we want in the system and why would we want to get it out?
4. Why do even the most technically sophisticated systems seem to fail?

and then sum up with a set of concrete recommendations.

DO WE REALLY WANT AN INFORMATION SYSTEM?

The answer to this question depends upon whether or not we can agree with a number of assumptions which usually underly the decision to establish an information system. First is the assumption that the critical deficiency under which most rehabilitation workers operate is the lack of relevant information. To what extent this is true is not entirely known. However, the provision of data to rehabilitation personnel will cost money which must come out of the same pocketbook as funds for the provision of services. This means that the benefits resulting from information retrieval must be compared to those which might accrue, for example, from using the money to hire additional counselors. Only that individual (e.g., a state director) with the responsibility and authority to authorize expenditures can assess this and the following points.

The second assumption is that the rehabilitation counselor needs the information that he wants. The cost-benefit issue is relevant here as well as the observation that even in counseling there is some dispute about the effects of having data on one's perception of a situation (e.g., test information). Giving rehabilitation personnel all the information they might want could possibly have an undesired effect. One can say this without even considering what it would do to an agency's budget. More than one organization has found that the addition of even such a small piece of equipment as a duplicating machine may result in their personnel being swamped by copies of reports which have no other effect than that of slowing down the operation of their offices.

The third assumption is that if the rehabilitation worker has the information he needs, his functioning will improve. Investigations in the area of research utilization and dissemination suggest that this assumption rarely holds. The incorporation of new data into one's decision making process, sometimes called innovation, appears to depend upon the individual's readiness to change as well as the source and format of the information. So much concern has been generated about this problem that one author (Rogers, 1962) was able to review 506 articles without discovering a probable solution.

The fourth assumption is that better communication among rehabilitation related personnel improves organizational performance. On a formal basis, enforced communication can have the same bottleneck effect as swamping personnel with every scrap of data that might conceivably be relevant to their work. On an informal level, the need to acquire information usually determines whether or not individuals actually communicate. In any case, the issue is two sided since the most potent aspects of communicating are the ability of the speaker to convey his message and the readiness of the listener to accept as well as understand the information (e.g., technical data).

The last assumption is that a user of an information system does not have to understand how it works, only how to use it. The best example of what this assumption means in practice lies in the common experience of most people who have had occasion to use libraries which are the most common type of information systems. Just think of the last time you couldn't locate the information you desired in the card catalogue and were reduced to searching through the stacks, one book after another. In all probability this frustrating experience led you to wonder why the material you finally found was not indexed under the heading you would have chosen? The answer to that question is in the next section, which deals with the main technological problem (i.e., the index) in information retrieval. It emphasizes the need to understand how systems work in order to alleviate some of the unsolved technical problems.

THE INDEX: BOTTLENECK TO INFORMATION SYSTEMS DEVELOPMENT

Although current technology can provide the means of transmitting data at near the speed of light and storing large quantities of information in small boxes, no one has been able to discover an effective means of anticipating the use to which a particular document will be put. Without this insight into the utilization of stored material, it becomes almost impossible to adequately label or index documents. However, even if this problem could be overcome there still are a number of linguistic difficulties which are just as frustrating to the cataloguer, information scientist and system user alike.

The first of these difficulties centers on the differential use of terminology within and among professions. Within rehabilitation itself, the use of a term such as "behavioral" shifts radically from speaker to speaker according to his orientation. Even more confusing is the difficulty that is presented by an attempt to read the literature of other professions and translate their findings into more effective rehabilitation services. In the business literature, for example, much can be found concerning personnel utilization. However, they never use the title "supervisor"and rely instead upon the term "manager". Therefore, if the rehabilitation title were used to search a business index, little would result even though there is a vast body of management science literature in the business world. In rehabilitation, the title counselor conjures up a set of fairly specific roles, yet in the business world there are: beauty, real estate, legal, grief, and other assorted "counselors" who also use the term. In short, the problem of multiple definitions and the use of jargon makes indexing documents a very complex endeavor.

In the same vein is the problem of synonyms. For example, consider a librarian who would like everyone interested in counseling to find the appropriate literature even though they might not know the activity under that name. The librarian could use one or more of the following verbs: to counsel, advise, suggest, prompt, admonish, recommend, prescribe, advocate, exhort, persuade, enjoin, charge, instruct, dictate, expostulate, dissuade, warn, etc. As far as nouns go, there is a choice among: counseling, therapy, psychotherapy, the proper names of the more than one-hundred recognized theories, etc. In short, if the librarian in question should use all possible index terms, then the cost and size of the catalogue would increase astronomically.

Even if the above described librarian could handle the cost/size factors, he would still be confronted by what I call "the indexing paradox". Under ideal circumstances, the index should lead you to that small segment of the literature that is relevant to your specific purpose. However, if the librarian uses every possible synonym when indexing (i.e., stressing redundancy to avoid the loss of any document), the use of any single term would result in your being directed to the whole library. On the other hand, if the collection is indexed sparingly you have the synonym problem as described in the previous paragraph. As of this date, no one has been able to find a path to the middle ground between too much and too little.

Some people see the electronic computer as the answer to this problem. The fact of the matter is that computers can accelerate any routine process but don't even begin to touch the linguistic problems. Computers are so literal, that they can't tell the difference between "a blind Venetian" and "a venetian blind". The solution, as the Department of Defense stated after more than ten years of investigations, lies in an improved understanding of how humans communicate and the underlying structure of language.

WHAT KIND OF DATA BASE DO WE WANT AND WHY WOULD WE WANT TO GET IT OUT?

Assuming that you still think an information storage and retrieval system is a good idea, there is still more bad news. The pet idea that most of us have of putting all previous literature into a data base must be rejected. The cost of going back and incorporating these documents would most likely exceed that of running the whole system for ten years and take about that long. By that time, all of this cherished material would be ten years older and most likely out of date. Further, studies have shown (de Solla Price, 1963) that scientific literature doubles in quantity in something less than ten years. Therefore, by the time we go back and convert already published material, we would be confronted by the same problem, only one decade later. In short, we'll just have to build a data base as we go along or suffer a literally endless wait for the system to become operative.

The content of the data base forms yet another issue. Who can say what piece of information will be of value one, two, five or ten years from now. Some very dramatic cases of rediscovery have been recorded. However, the cost of supporting such an endeavor and the slowness of such a system's everyday operation would eliminiate the possibility of quick retrieval that counselors, for example, would need. On the other hand, how much of what we want or need would be eliminated by taking a less comprehensive approach to acquiring literature?

No one has yet published or announced an answer. Most systems let their resources (e.g., money, time, personnel, etc.) and needs determine the answer.

On the subject of needs, some pertinent thoughts are readily available as guidelines. In the military, as in medicine, the feeling is that one cannot afford to miss any relevant piece of information. Business, however, will go only so far as will demonstrably improve their operations and no farther. The difference, obviously, is in the amount of risk perceived. A decision or at least a criterion could be established along these lines for rehabilitation.

When it comes to information needs in rehabilitation nothing but the vaguest comments have ever been issued by people in the profession. Since information utilization specialities such as Systems Analysis and Operations Research already exist, it would appear useful to consult with these professions and have them tell us what data they're capable of using. These guidelines could be employed to determine our own acquisition policy. We would not only have a rational basis for our selection but also, simultaneously, the ability to employ techniques which are on the forefront of research utilization. In this way, both of the stated questions in this section can be adequately answered. We should acquire only what we can use ("use" being defined as the ability to select an available technique which will give the information importance for rehabilitation), and we should seek to retrieve it for the same reason.

WHY DO THE MOST TECHNICALLY SOPHISTICATED SYSTEMS FAIL?

There seems to be a direct relationship between the sophistication of an information system and the amount of failure it is doomed to suffer. If you don't know what a sophisticated system would look like, you might take a look at an earlier paper I wrote called "REPORT: a comprehensive information system for rehabilitation personnel." Back to the topic though, the reason for this failure seems to be socio-psychological and based largely upon the system of rewards and punishments built into our present day society.

Consider the supervisor in a rehabilitation agency, for example. He would find it very "uncomfortable" to get a large amount of data every morning at 9:00 a.m. Each day he would dread coming to the office for fear of being confronted with ever increasing amounts of paper on his desk and the necessity of making more and more decisions about it. The result, as recorded in other settings, would most likely be that he would begin to fight back and sabotage the system in order to stop this endless flow of documents.

Suppose we're talking about an extraordinarily energetic supervisor who can read and comprehend at very high speed. We'll assume he can handle this flow with some exertion, but do you think his efforts would be rewarded when he discovers in his reading that his boss's pet project is useless or that they're replicating an already proven study at great expense or that they missed the boat at some earlier stage and it's his boss's fault? I don't think he'll get much of a reward.

As another example, consider the counselor-educator who, some say, lives in an ivory tower. His promotions and salary increases are usually dependent upon how much research he publishes. If he avoids sophisticated information systems, he doesn't have to read all the previous literature and can get his work done faster (i.e., turn out more publications). Along the same lines, if there is no information system present, he can paraphrase other peoples' ideas (not mentioning this fact, of course) and appear very wise in the presence of those who don't know the literature. In short, our whole system of rewards mitigates against an individual really wanting to have a sophisticated information storage and retrieval system made available.

If, on the other hand, we use a model something like the one they use in operations research where praise and renumeration follow swiftly on the heels of moneysaving rediscoveries and ideas, then we would have a reasonable chance of having a data retrieval center accepted. Since we use a different model, however, some effort will have to be allocated towards creating an appropriate climate for the introduction of an information system or we'll be wasting out time as well as money.

RECOMMENDATIONS

I should like, therefore, to conclude now with a summary of my experience during the last year and a half, the last year of which I spent as a postdoctoral Rehabilitation Research Fellow sponsored by the Social and Rehabilitation Service (DHEW) at the University of Wisconsin.

Using hindsight, I am now able to state that the most useful and reliable techniques of acquiring information about data processing systems are a) use them yourself, or b) speak to someone that has used them. The literature in this area is filled with glowing reports of systems which are just around the corner from completion. Having started my reading of the major journals with the 1960 issues, I was able to "follow" the development of many systems. The overwhelming impression one gets is that many projects were started and few ever finished. Of these few, an even smaller number were implemented and are still in existence today. Finally, of this "even smaller number", only a handful can be said to have even partially achieved their goals.

From this extensive reading and many hours talking "shop" with the University of Wisconsin's very large Computer Science Department as well as its Computer staff, I was able to gather some of the few "facts" that exist in this area as well as a series of valuable cautions for potential project planners. It is extremely difficult to record the impressions of one year's conversations and reading, particularly since the material is highly inter-related. However, the recommendations that follow, though general in nature, are among the most important suggestions of "experts" (if any indeed exist) in information retrieval.

A specific Group should be identified and charged with the mission of developing a plan for a data retrieval center. This Group must be authorized to set the criteria by which operating success wil be judged. Further, this Group must also have the responsibility of seeing that the center is appropriately financed, staffed and equipped. Experience has demonstrated that without such an intimately involved Group, the center will tend to overextend itself, lack direction, fritter away its resources on special interest or influential groups, and generally head down the road to rack and ruin. The formation of such a Group, and I'm not suggesting anything which even vaguely resembles an advisory commitee, does not guarantee success. The lack of such a Group does, however, guarantee a costly failure.

The importance of such a Group can be explained most readily, I think, when one considers that most of the personnel, upon whom the literal development of such a system depends, work in mathematical notation. The result of this circumstance is that the Group must provide clear-cut, operationally (i.e., mathematically) definable goals or leave their employees directionless and frustrated by an inability to practice their specialities.Further, all of these goals must be specified simultaneously since the systems analysis (which attempts to remove inconsistencies) and the Operations Research (which seeks an optimum solution) shift dramatically upon the addition, modification and/or elimination of any aim or sub-goal. As implied, this Group should be backed up with its own staff who must be competent (not necessarily qualified) in systems analysis, Operations Research, systems programming and economics (e.g., for a cost-benefit study).

One of the main worries of information systems, and those who order them established is money. Equipment and personnel are very expensive, but even more expensive is the processing itself. The most harrowing (and true) story concerns a large (nameless) firm whose management decided to be very modern and establish and computerized management information system. For reasons already enumerated, the firm's personnel passively resisted this innovation. The management sensed this, but went ahead on the assurance of its computer experts that the whole process would be completed in two years, at a cost not exceeding $1.5 million. The final results were that it took five years and $5,000,000.00. The firm's original records were turned into scrap paper. The old line personnel left in droves, the system never operated properly and, all the people who knew how to make the business function were now employed elsewhere. It's my understanding that this corporation is now in receivership and under new management.

The point of this story is not that information systems are worthless, but rather that one must keep firm, definite, and continuing control of their development and operation. By building a cost-benefit analysis into the structure of an information system, the supervisory Group would have the capability of making decisions which would tend to modify expensive errors in current policies. A good economist, working with cost oriented Operations Researchers can do this job very well. Essentially, the main goal of expending this kind of effort is to avoid setting up any kind of irreversible change which might tend to damage the organization.

Aside from the computerized approaches, there are many "manual" systems which approach and occasionally exceed the retrieval speed of the former. Manual indexes tend to cost only a fraction of the computerized ones and, in many cases, are more efficient and effective. The group setting the criteria should, therefore, leave the decision to its technical staff within the constraints that it imposes.

In any event, all data to be put in the selected system must be in machine readable form (i.e., able to be read by a computer). While this might seem to be a contradiction if a manual system is selected, the likelihood that computer technology will make great improvements, coupled with the fact that the cost of converting a data base to machine readable form is likely to exceed the cost of the whole system, makes this step not only prudent but mandatory.

Once the data retrieval center is on its way, it is vital that it have a full-time, technically trained administrator. It is not at all important that this individual know anything about rehabilitation. The best information systems in the country have people running them who know little or nothing about the material being processed. They do, however, have an intimate acquaintance with the goals and criteria of the center as set down by the supervisory body. Using those operationally defined criteria, the administrator can alter the system towards increasing effectiveness and efficiency. The job, I suppose, is most like tuning a piano. The factory can only go just so far. After that some highly skilled individual has to do it by ear.

As I pointed out, the fact of the matter is that no one knows a really good way to index documents. When it comes to predicting what use some individual will have for a particular document or to identifying some specific piece of desired information, nobody knows even a "good" way. The current alternatives, therefore, consist of techniques which vary as to: a) speed, b) depth, c) cost and d) capacity. The best anyone can do is to choose the one which best fits his needs and be prepared to take advantage of technical improvements (e.g., by storing data in machine readable form) as they occur. Any of the currently available systems are likely to be "better" than the total loss of all recorded information. Some of them, however, can put you out of business if they're not managed properly.

Finally, I discovered for myself that it would be possible to take the best pieces from many systems and put them together to form one that I thought would be most suitable for rehabilitation. However, not being (by definition) one of the Group I described the likelihood that this approach is best for rehabilitation is very small. If you would care to look at it, I believe it's in your hands now. It's the paper that was passed out earlier.

I am the current Chairman of the American Rehabilitation Counseling Association Committee on Research Utilization and Dissemination. In that role, as well as a postdoctoral fellow, I've had conversations with many organizations now in the information retrieval business. Some of them are more than amenable to processing rehabilitation information and servicing its personnel. It would save a lot of grief and expense if some of these groups were utilized to handle parts of any future rehabilitation data retrieval center. Along this line, it would also be well to put rehabilitation personnel in touch with operative information systems so that they can use them while a rehabilitation plan is being formulated. The cost would be negligible compared to any other intermediate solution.

CONCLUSION

Like the counselor-educator I described, I've failed to document many of the ideas I've presented. They represent the results of more than eighteen months of study. My goal has been to present the negative side of the information retrieval-utilization problem in order to introduce, in my own small way, a note of caution and respect for the risks involved. I personally believe that we in rehabilitation need, want and will eventually have an information system of our own. It's just that I'd like to see us avoid some of the identifiable pitfalls as well as the dangers of haphazard planning. In short, let us practice what we're preaching and "retrieve and utilize" the research in this area.

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ANYTIME THINGS APPEAR TO BE GOING BETTER,
YOU HAVE OVERLOOKED SOMETHING

CHISHOLM'S LAW OF HUMAN INTERACTION

THE USE OF REHABILITATION KWIC INDEXES FOR A COORDINATE INDEXING PROCEDURE AND INFORMATION RETRIEVAL.

JOHN E. MUTHARD, PH.D.

DR. DUMAS:

Now, I'd like to bring Dr. Muthard back. He'll speak on the use of various "in-office" indexing procedures for information retrieval.

DR. MUTHARD:

I'd like to introduce Coordinate Indexing (CI) to you by telling how I became interested in it. Like most people in rehabilitation, I had a continuous flow of documents over my desk, documents that I was finding harder and harder to classify and file in a useful fashion. Although I might recollect seeing a particular paper about sheltered workshops, or work adjustment, or epilepsy and its relationships to employability or what have you--I could no longer really locate them. I was filling more and more filing cabinets and essentially "losing" the material in the files.

About 1962, I saw a paper in the American Psychologist by Broadhurst on coordinate indexing. This described a personalized approach to document retrieval which enables the user to systematize the materials he collects by indexing it in terms the user habitually uses. Documents are classified according to one's unique interests,biases, and language habits.

The coordinate indexing (CI) system is a document retrieval system and, therefore, part of research utilization in the sense that documents can't be used until they can be located. If you keep in mind that a CI system is designed to enable a person or organization to have a unique information document retrieval system, you will understand why we go through the following processing steps.

When a document is received, one has two options--the document either goes into the waste basket or in the pile to be coordinate indexed. Indexing can become a major bottleneck for anyone using a coordinate indexing system. To secure the major benefit of a unique, individualized set of index terms, one must invest some time at the start in classifying documents. When you have a set of 500 or more basic constructs that you want to use in your system, it can be done by your secretary or an intelligent clerical worker.

Let's consider how to classify and process a specific document. A recent report from the general agency in South Carolina can be used to illustrate the procedures and problems associated with indexing a document. The paper is: The Unfit Majority: a research study of the rehabilitation of selective service rejectees in South Carolina. The title usually suggests some index terms; in our example, I would use "selective service rejectees" and "vocational rehabilitation". An examination of the projects summary of significant findings also suggests "case finding" and "evaluation services" as possible additional descriptors. Whenever a descriptor term or phrase is part of the title, it can merely be marked; thus, in the illustration, selective service rejectees, and vocational rehabilitation could be bracketed but any other terms one wishes to use would be written near the title for use by the clerical worker. With these decisions, the work of the professional ends. After you have developed a complete set of constructs, a kind of personalized thesaurus of your professional interests, you can turn over this part of the job to an intelligent clerical worker. It is best to remain involved in this classification process to some extent so that you continue to form and know the index system.

The clerk then uses 3 x 5 cards to type an original and one carbon of a card listing author, title, source and descriptors. Details for doing this are described in the UFRRI KWIC index of Selected Rehabilitation Counseling Literature. (See Exhibit 1)

One card becomes the accession card. The number in the upper right identifies the document with a unique number so that it can be stored and located readily. Numbers have no classification use; they merely indicate where the document should be on your shelves. To permit orderly re-shelving of documents, the number (in this case, 761) should always be written in the same corner of the document. The duplicate serves as an author card, and is useful simply because a lot of us remember documents by author. If I'd like to locate a paper Dr. Dumas wrote on information retrieval, I don't have to look at the coordinate index categories; I look directly under Dumas in the author file.

EXHIBIT 1

ACCESSION CARD

761

Clements, H. M.   Duncan, J.A.   Hardy, R.E.

The Unfit Majority: a research study on the rehabilitation of Selective Service Rejectees in South Carolina. SRS 1653 G.

Columbia, South Carolina: South Carolina Vocational Rehabilitation Department, 1967.

Selective Service rejectees, vocational rehabilitation, case finding, evaluation services.

Two copies: One filed alphabetically by the author's last name, and the other by the number in the upper right hand corner (761).

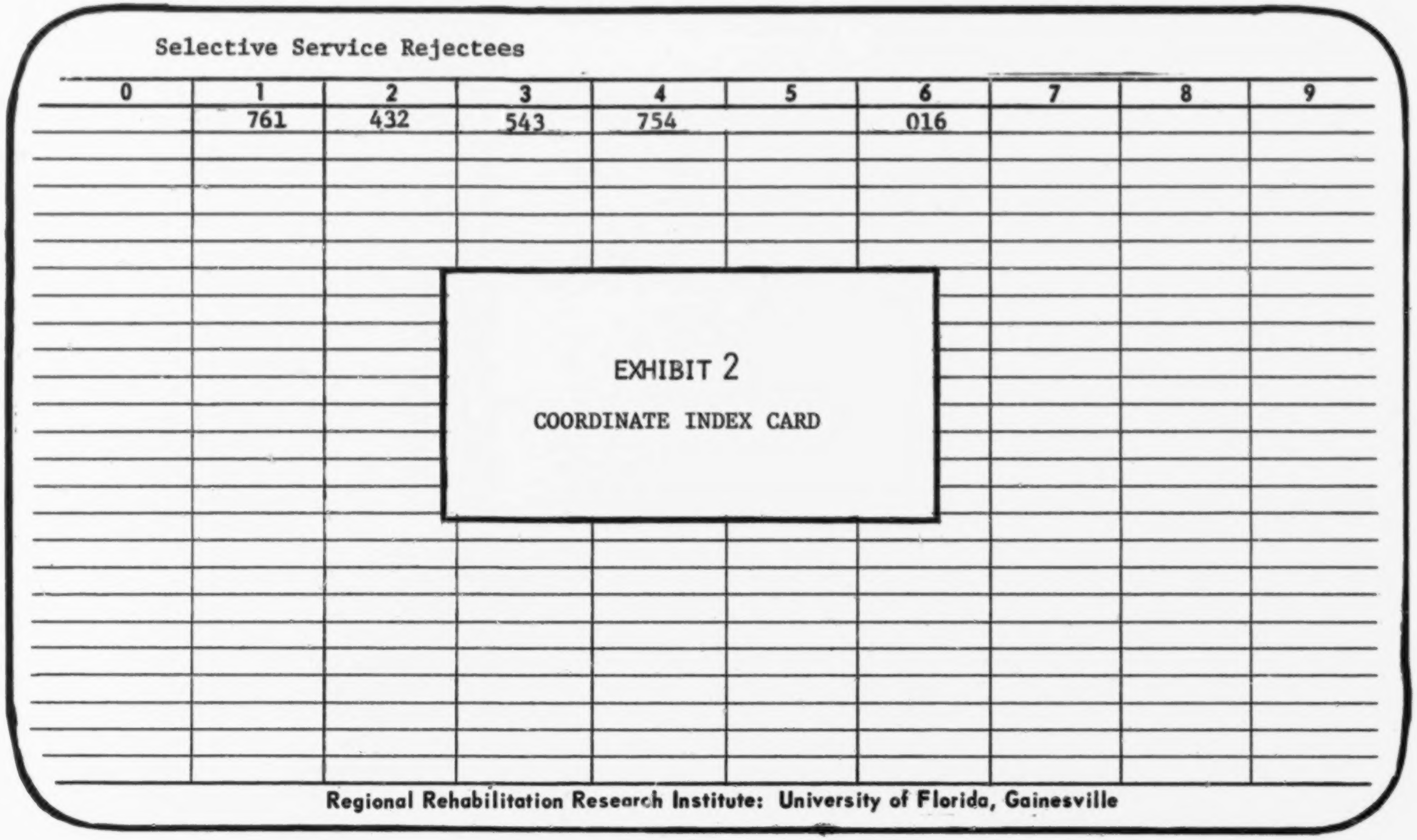

EXHIBIT 2

COORDINATE INDEX CARD

Selective Service Rejectees

0	1	2	3	4	5	6	7	8	9
	761	432	543	754		016			

Regional Rehabilitation Research Institute: University of Florida, Gainesville

There is just one more step before the document is shelved or filed and you're ready to use it. For this, you need coordinate index cards such as the 5 x 8 card illustrated opposite. As you can see, the index card has the descriptor term at the top, and our document is recorded as 761 in the ones' column (according to the last digit) of the card. For illustrative purposes, it has been assumed that four other documents in the files of this user have been indexed under "selective service rejectees". The numbers are listed by the last digit, in order to facilitate locating documents under multiple descriptor terms. Thus, if one were looking for reports about the case findings of Selective Service rejectees and looked at the Index card for these two descriptors you could quickly see that a number common to both terms is 761. Such cross indexing becomes even more valuable when you are searching for specialized information such as the "work evaluation" of "epileptics" in "sheltered workshops". By looking at the three CI descriptor cards for these terms, you would be able to select any documents in your collection concerned with all three topics or any combination of the three. When the document has been listed on the CI cards, it is shelved according to its accession number.

This CI process simplifies bibliographical search, and has been very useful to me for preparing papers. We have had the disconcerting experience that it got to be too popular with the students at the University of Florida. They were finding that there was a quick way of getting ready to prepare a term paper. You went to the files of the Regional Rehabilitation Research Institute. After a half hour of work with the CI and the materials there, students had more bibliographical information and documents than they could have secured in a whole day at the library.

This procedure has the merit of being personalized, but it's not as simple and economical for most users as the Keyword-in-Context (KWIC) indexing procedure. I've found the CI system quite useful and believe, when used in conjunction with the KWIC system, it might enable people to locate basic documents of relevance to their own resarch or practitioner needs on a regional or even a national basis.

KWIC INDEXING

The second information retrieval approach I wanted to tell you about may have sufficient merit that SRS or other groups may wish to try it or some modification of it for the rehabilitation field. The technique itself is the Keyword-in-Context indexing procedure. We at the University of Florida RRRI published the first KWIC for the rehabilitation field because we met and hired Dr. Dumas--who learned of their utility in other fields--and because we had uncommitted funds. The idea was appealing; thus, with SRS approval we prepared three indexes.

One wouldn't conceive of KWIC indexes without a computer because they'd be impossible to do. The unique computer procedure devised for the KWIC lists the significant words in the title of each accessioned document so that in a strip form the significant words are alphabetized. A sample of this listing follows in Exhibit 3.

With the KWIC, one can locate a document title on the basis of any significant word in the title except articles, prepositions and non-differentiating words. For example, hundreds of documents have rehabilitation in their title, so that term would not be one of the significant words. As you might expect, transforming printed material or someone's list--such as SRS's 1962 research bibliography--from a bibliographical entry that was satisfactory for publication into one which could be processed by the computer into KWIC Index was a big task. It took hundreds of keypunch operations and clerical hours.

Although the KWIC Index procedure is within the capability of a research organization to use, it is not at present feasible for most individuals and organizations. The technical procedures have all been developed into working form by IBM staff; one of their service representatives could tell any interested person about the procedure and provide the necessary computer documentation to use it. It seems to be suited to use with up to ten or fifteen thousand documents, but collections which get much larger would have to be either indexed by another procedure or sorted into more specialized indexes of smaller size.

PUBLISHED KWIC INDEXES

An examination of the Research and Demonstration Projects KWIC will illustrate the major ways in which such a tool may be helpful. The Keyword Index, as illustrated above, provides an alphabetical listing of keywords along with contiguous words in the document's title. The accession number enables the user to locate the full bibliographical entry in the KWIC. If the user's documents are filed according to the KWIC accession system, it would also be possible to immediately locate the document on the shelves. As the example shows, the reader can narrow his search for appropriate documents by examining those additional words in the title which appear on the index line with the keyword.

The Bibliography provides the usual information such as author, title, source; in addition, it includes the SRS grant number and, if these seemed desirable, descriptors. Descriptors are terms which further describe the contents of the document and increase the likelihood that the interested reader will be able to locate the document. When added to the title, they can be readily incorporated into the keyword indexing process.

As you might expect, the author index section lists the document numbers of all the publications by

SUBJECT INDEX

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QUASI-TH+THE EFFECTS OF REINFORCEMENT OF SELF-REFERENCES IN      10509
PPROACH TO OCCUPATIONAL REINFORCEMENT, SRS0422.=           + A   12297
   OF SELECTIVE SERVICE REJECTEES IN SOUTH CAROLINA, SRS1653     10363
NORMAL DEGLUTITION, ITS RELATIONSHIP TO THE RESPIRATORY          11103
N TISSUES+COMPARISON OF RELATIVE HEATING PATTERNS PRODUCED I     11256
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AUTHOR INDEX

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CLARK LL /ED/      10357     COX JA                 12394
                   10358     COX RH                 12395
                   10359                            12396
                   11319     COX RM                 12394
CLEMENT E          11792     COYNE N                11898
CLEMENTS HA        10363     CRAFT CM               10430
CLIPPINGER FW      10776     CRAIG HW               10431
```

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10363 UNPUB. FINAL REPORT, MONTEFIORE HOSPITAL, NY, 1961.
CLEMENTS HA DUNCAN JA HARDY RE
THE UNFIT MAJORITY, A RESEARCH STUDY OF THE REHABILITATION
OF SELECTIVE SERVICE REJECTEES IN SOUTH CAROLINA,
SRS1653G.=
FINAL REPORT, FOCATIONAL REHABILITATION DEPT, COLUMBIA, S.C,
1967.

GRANTEE INDEX

1652S ARKANSAS REHABILITATION SERVICE
LITTLE ROCK, ARL.
HENRY KRONENBERG 64-1

1653G SOUTH CAROLINA DEPARTMENT OF VOCATION
AL REHABILITATION,
COLUMBIA, S.C.
T. K. FOWLER 64-3

EXHIBIT 3

author. Publications with multiple authors are listed under each author.

The SRS Bibliography has two special indexes which are not part of the other KWICs published by UFRRRI. One of these provides the full address of each SRS project grantee who has submitted a final report or publications resulting from their sponsored research. It provides the KWIC user with a list which locates the research project director so that additional publications or further information could be secured. Another special listing shows what publications have resulted from each project; that is, it lists the number of the indexed publications by SRS grant number. One can thus readily determine what publications have resulted from each of the projects.

It is apparent from our experience with the preparation of the three KWICs that the utility of the index and its scope are a result of the adequacy and comprehensiveness of the information incorporated in the index. A key consideration in preparing this type of index is preparing bibliographical materials in machine readable form, or if that is not feasible, in a typed form which can be used for keypunching. The effort and cost required to transform the usual bibliographic entries into the KWIC format is so great as to demand the use of the proper format from the very beginning if the development of a KWIC index is anticipated.

The three KWIC indexes published by UFRRI illustrate some of the ways in which this technique may be useful to rehabilitation workers. The SRS Research and Demonstration Projects KWIC shows how all the reports of a given type or classification can be organized so that potential users can locate them. Other groups of publications which rehabilitation workers might well want to see listed in KWIC form could be all journal articles appearing in the major rehabilitation journals for a specific time period. As it is, these articles are indexed in several abstracts which are not readily accessible to rehabilitation counselors and in many cases even research workers. Special KWICs devoted to rehabilitation areas such as rehabilitation facilities, mental retardation, work evaluation, etc. might also be developed.

The Selected Rehabilitation Counseling Literature KWIC illustrates how an organization might use this technique so that its literature would be readily accessible to all of its staff. Such a procedure might be used by state agencies or facilities so that each staff member would have ready access to an index of the rehabilitation documents held by the state agency or available from other sources.

Another variation on the possible uses of the KWIC appreoach is illustrated by the Management and Personnel Abstracts KWIC. With it, an administrator or researcher can locate not only the reference information for articles of interest to him, but can also read short informative abstracts of these articles which enable the user to decide whether he needs to secure or read the complete report. To the extent that abstracts such as those included in this last index are available in machine readable form, it provides an excellent means for keeping individuals with similar concerns informed about topics which are now reported in a wide range of publication outlets. It also has the potential for being the base for a more personalized information retrieval such as the SDI system described by Dr. Dumas.

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RESEARCH UTILIZATION IN THE SOCIAL AND REHABILITATION SERVICE

BERTRUM W. GRIFFIS

DR. MUTHARD:

As our next speaker we have with us from Washington Bertrum Griffis, Assistant Chief of the Research Utilization Branch of the Division of Research and Demonstration Grants, SRS. I understand this new Branch is in process of being formed, and he's going to talk about it and related matters.

Mr. Griffis has been with SRS for three years. He is a University of Minnesota MA in Counseling, and has a background of counseling at the University in Veterans Administration programs, as well as experience in research at the American Rehabilitation Foundation in Minneapolis. He's been very active in helping us do some of the things that interest us in Research Utilization. He will bring us up to date on what's happening and what is planned by SRS in the area of Research Utilization.

MR. GRIFFIS:

Greetings from Washington. I hope no one will edge toward the rear or walk out because of the connotations of that term, but if anyone does I will certainly try to be as understanding as possible.

We are very pleased, John, that you and your colleagues at the University and in the Regional Office and State Agencies have undertaken this conference. We know that Miss Switzer (Commissioner), Dr. Garrett (Associate Commissioner), Dr. Usdane (Chief of the Research and Demonstration Division), and others are all devoted to research utilization and are hoping that conferences such as this can give it added impetus.

I should like to digress now to say that at this moment of loss and sorrow,* which leads us inevitably to more general reflections, it seems appropriate to ask what it is we have lost, what Robert Kennedy stood for, what meaning his death can have for us in general and perhaps even for this conference.

I think President Johnson captured quite a bit of it when he said that Robert Kennedy never, despite everything, lost his belief in what one might call the American Dream and our capacity to realize it. To loose even one man with confidence in such goals, and the willingness to work for them, is grievous at any time and especially so today.

Further, we know that Miss Switzer was very fond of him and shared his interest in simplifying and updating the organizational means for getting services to those who need them. We also know he supported the recent steps taken within HEW to further these goals, and this moral and practical support we also now have lost. We might in addition note his unusually appealing sense of humor, worth recalling not only for its rarity but also its possible relevance for this conference. I refer to the fact that humor at its best has unexpected, innovative features. It surprises and delights us by combining old elements in new ways, thus opening the door to new perceptions of old realities, which research utilization must also do if it is to be successful.

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* Senator Robert F. Kennedy had died only a few hours earlier.

I would like to comment on several topics of interest, among them (1) the SRS Task Force on Research Utilizations, some of its recommendations, and the steps being taken to carry them out; (2) more detailed comment on one of these recommendations,the use of Research Utilization Specialists in State agencies to expedite the adoption of new research results; (3) the role of the Research Utilization Branch, of which I am a member; and (4) perhaps one or two general remarks on research utilizations.

The Task Force on Research Utilization. In November 1966, Miss Switzer set up the Task Force to identify usable research results and devise ways and means to utilize them. In December 1967, after many meetings, the Task Force rendered a Final Report to Miss Switzer, and soon thereafter she responded by asking the Task Force to carry out most of its recommendations operational and these specific plans are going to her very shortly.

I should like now to mention some of the major recommendations of the Task Force. Many are new,others are already being carried forward, but need to be expanded and done more systematically. One is to contract for more state-of-the art monographs, for these can tell us clearly what has been done up to now in a given area, what remains to be done, and usable results are already at hand. Such a monograph on research trends in deafness is now nearly completed,and others are either planned or underway.

Another is to convene Research Utilization Conferences such as this one. I attended one just two weeks ago in Washington, D.C., on the use of "Schedule A" for certifying mentally retarded persons for specific jobs in the Federal Civil Service. Our project there has been encouraging and evaluating this program, which has been so successful, that about 5,000 of these individuals have already been placed. The conference was impressive in that a definite approach was offered for use, along with good evidence for its effectiveness. The hope is that it can be made permanent and expanded, and used also at State and local levels. Other research utilization conferences have been held or are being planned, notably one this fall on the rehabilitation of disadvantaged persons.

A third and most important recommendation of the Task Force is that SRS support "change agents" in State agencies. The Guidelines for these "Research Utilization Specialists" have already been written and were approved in principle by the NACVR* at its February 1968 meeting. These Specialists will promote the actual use by practitioners of new research findings, so that more and better-quality rehabilitations can be achieved. Using tactics and strategies drawn from what we know about the diffusion and adoption on innovations, their overall goal will be to bring usable findings to the attention of administrators, practitioners, and trainees in ways most apt to lead to their adoption in practice. They will be supported initially (perhaps for five years) by SRS, with the expectation that they will be "adopted" by the State agencies when their value has been demonstrated.

As we know, an active interest in planned change has been growing rapidly, accompanied by a heightened sense of urgency. Both SRS and our society at large are feeling these pressures. Herein lies the importance of the Research Utilization Specialist who can help to assure that change when it comes will be sound and for the better.

It is hoped that the Guidelines for these Specialists can be promulgated shortly, and the actual proposals received from the States through their Regional Offices no later than October 1, 1968,which is the deadline for consideration at the February 1969 NACVR meeting. Short-term training to supplement the basic qualifications of the Specialists will be planned beforehand in Washington,D.C.,with

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NACVR: National Advisory Council on Vocational Education the first phase to be offered soon after the projects are approved.

The Research Utilization Specialist must bring unusual qualities to his task, for that task--which is to encourage new practices based on effective research results--is subtle and complex. He should be a practitioner who is known within his State for his innovative practices and his knowledge of the needs of clients and professions. He must be naturally skilled at interpersonal relations,effective in dealing with individuals, groups, and agencies, and able to distinguish valid from invalid research results. He should have a genuine interest in social and rehabilitation work and a desire to improve it; in new and effective research results which may help to accomplish this; and in the principles underlying the diffusion and adoption of innovations.

More specifically, he should have a Master's Degree in rehabilitation counseling or related area, and at least two years of experience in a State agency or other social or rehabilitation facility, preferably as a practitioner who has encountered a variety of clients and provlems. Supervisory experience or potential is also desirable, since he will function at a "Statewide Supervisor" level. However, it will be his knowledge of the needs of clients and practitioners, and his expertise as an innovator, that will mainly enable him to carry out his mission.

This mission requires that he be at once a catalyst, resource person, participant-observer, teacher, and (to some extent) research analyst; and that he be aware of the forces within individuals and organizations that promote and inhibit change.

A fourth significant recommendation of the Task Force is that we establish a Final Report Evaluation Study Section in the Research Utilization Branch, similar to the four we now have to evaluate new proposals in the Rehabilitation Research Branch. The idea is that it is just as important to evaluate

Final Reports which contain the results of research as it is to evaluate porposals at the outset. This is also an essential activity if we are to use our Final Reports as a major resource in research utilization.

The Chief of the Research Utilization Branch will be the Executive Secretary of this Study Section. Its members will include former members of other Study Sections who evaluated the original proposals; specialists in the diffusion and adoption of innovations; outstanding practitioners from the field; and other resource persons from universities and from social and rehabilitation agencies. It is felt that such persons will be able to examine promising research results and come up with concrete suggestions for their use in specific programs to improve services to clients.

Finally, the Task Force recommended that the various programs in Rehabilitation Services Administration under Mr. Hunt be actively involved in all research utilization efforts. To accomplish this, a liaison person from each of Mr. Hunt's Divisions is being appointed to work closely with the Research Utilization Branch.

THE RESEARCH UTILIZATION BRANCH

There are now four Branches within the Division of Research and Demonstration Grants: The Rehabilitation Research Branch, comprising all of the former VRA R&D program; the Demonstration Projects Branch, a program of demonstrations in Public Assistance authorized under Title XI, Section 1115 of the Social Security Act (1962 Amendments); the Cooperative Research and Demonstration Grants Branch, a program of research and demonstrations in Public Assistance designed in part to produce new knowledge for use in reducing economic dependency, and authorized under Title XIX, Section 1110, of the Social Security Act as amended in 1956; and the Research Utilization Branch.

The establishment of the Research Utilization Branch (RUB) was announced by Commissioner's Letter Number 68-1 dated July 28, 1967. The logic for this move lies in the fact that achievement of the legislative goals set for SRS research programs clearly implies the use of significant findings from the research to improve programs.

A basic fact--and question--confronting RUB is that our research program in Vocational Rehabilitation has been moving forward for about 12 years and has produced about 1,000 Final Reports; so that the question naturally arises, "What is being done with all those research results?"

This not to imply that no utilization of our research results has taken place. Indeed, the record of the old VRA in this regard, with its Selected Demonstrations and other measures, was relatively good. This was recognized by Dr. Arthur H. Brayfield, Editor of the American Psychologist, in testimony before the Research and Technical Subcommittee of the House Committee on Government Operations in 1967. He mentioned the VRA among four or five other Federal agencies as being very well regarded for the quality of its research, adding that "under the leadership of Mary Switzer, VRA has a commendable record" in using research results to improve its programs.

However we now need to do more and do it more systematically. This we are starting to do, for as may be seen, RUB participates in carrying out all the previously noted recommendations of the Task Force. Another effort we consider very useful is the writing of the Research Briefs. Designed to highlight usable research results for practitioners, they were initiated last fall. Each one is distributed to from 15,000 to 20,000 individuals and agencies, and all have been well received. However, our staff is insufficient to give the Briefs the emphasis they really deserve.

We have also taken steps to improve the quality of our Final Reports, asking project directors to highlight usable results inside the front cover of the report. Now, we are completing a second revision, in which we drop the old requirement for a Separate Summary and ask instead for a Research Brief of the sort we have been distributing. We are including a sample Brief with each Guide, plus notes on its preparation. Each project director is also required to write an abstract of the report, which is to appear immediately before the text, as for example in the Personnel and Guidance Journal. Finally, each report is to be distributed by the grantee to about 200 basic consumers, whose names and addresses we will furnish when acknowledging receipt of each Final Report. All this is in addition to the Highlights inside the front cover of the report.

Further, Dr. Muthard and his associates have very recently updated our Bibliography of Final Reports, including in it among other features a keyword index which enhances retrieval of categories of reports. We intend to take additional steps in this general direction, to permit more systematic retrieval of categories of reports as an aid to research utilization.

We hope these and other efforts and activities will promote a general atmosphere conducive to innovation. Consistent with this, we are of course receptive to R&D proposals dealing the dynamics of innovation.

I always find it hard to close without making general remarks, of which I seem to have two or three:

(1) It is a prejudice of mine that the more nearly basic a research is the more apt it is to produce usable results. Thus, basic research on dependency, interpersonal relations, and attitudes of the able-bodied and of employers toward the handicapped, to give three examples, can produce many results usable in a variety of situations. The same is true of research in physical medicine. We should not permit the pressures of the moment to divert us from such basic research, which in the long run pays off better than any other.

(2) The dialogue on innovation too often omits the client (our ultimate concern), or assumes he will always be an eager user of all we have to offer. This is not necessarily so. For example, many studies have shown that the disabled, more than others, tend to engage in self-defeating behaviors which in many instances lead to the disability in the first place. The point is that really effective innovation implies rehabilitative changes in the client, for if he does not change what other change matters? An without such change, what does all the innovation and utilization in the world come to? Thus utilization _by the client_ of what rehabilitation has to offer is in the end the decisive thing.

(3) Finally, there are many reasons for resistence to change within individuals and organizations, some of which may have functional utility. Since an energetic Research Utilization Specialist may tend to see them all as obstructions, a note of caution may be in order:

> "All forces which contribute to stability in personality or in social systems can be perceived as resisting change. From the standpoint of an ambitious and energetic change agent, these energies are seen as obstructions. From a broader and more inclusive perspective, the tendencies to achieve, to preserve, and to return to equilibrium are most salutary. They permit the duration of character, intelligent action, institutions, civilization, and culture."*

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*Lake, D.G. "Concepts of change and innovation in 1966." _The Journal of Applied Behavioral Science_, Vol. 1, No. 4, 1966, Pp. 3-24.

OPERATIONS RESEARCH IN STATE
VOCATIONAL REHABILITATION AGENCIES:
ITS STATE AND POTENTIAL.

PART 1

BEN WYCKOFF, PH.D.

DR. MUTHARD:

Dr. Ben Wyckoff is Research Director of the State Office of Vocational Rehabiliation located here in Atlanta. He will cover the kind of operations research done by his agency and discuss some of the problems that arose in handling this information.

DR. WYCKOFF:

Thank you Dr. Muthard. Much of the discussion concerning research utilization in a rehabilitaton agency tends to center around the use of research findings obtained by investigators in various settings such as Universities. At the present time, I would like to discuss activities of a research unit within the State Agency. Naturally, we have been concerned with information handling; that is to say, gathering, analyzing, interpreting and presenting information of various kinds. However, handling and interpreting information is not a function of research alone but a function of administration in general.

In my own thinking I have come to think of research as being information gathering with the purpose of finding out something with some degree of generality. By this, I mean that the findings have their application not alone in some singular instance of decision making but apply from one time to the next or from one time to the next or from one location to another, etc. We are not looking for results that are absolute or universal; they may have a very specific setting in which they apply but are different from purely administrative information handling in that there is some degree of generality.

This is not to say that a research unit may not be called upon at times to assist in purely administrative information gathering, and it is entirely logical that it be asked to perform such functions simply by virtue of the fact that the research unit will have its fingertips on information of potential importance in day to day functioning. In practice, a research unit is going to become facile at laying its hands on data. Therefore, this capability can be useful not only for research, but also for administrative purposes. The thing, then, that differentiates the work of a research unit from other information handling is that we are concerned with things that are non-standard. When we get something standarized, it is no longer much fun, so we turn it over to data processing or somebody else.

SAMPLE PROJECTS

We have put together a kind of random sample of fragments from a number of different research activities included here as "Exhibits." Some of these examples are charts or graphic materials presented here out of context and not intended as a presentation of findings, but rather as an illustration of types of studies and materials that have been presented.

The first example is a report presented in its entirety--two pages, and incidentally, our reports have progressively gotten shorter and shorter in that the amount of usefulness of a report is apparently inversely proportional to the length. The report in Exhibit 1 is on the affects of local offices and population of counties on number rehabilitated. We were gathering some information for a committee making administrative recommendations regarding "organization." One of the questions that came up was: does it really pay to have offices scattered around? We had some data on clients rehabilitated in different counties, and we could get the population for these counties. We found that counties with local offices were worse than the average county. It appeared to me that this might be because counties with local offices tended to be the larger counties and larger counties do worse than average. We put this data together and my hunch was confirmed. We were able to sort out these variables. We learned that counties with local offices, compared to counties of similar size, were uniformly doing better.

The second Exhibit shows graphic presentation of figures on cases closed referred by reasons for closure with the breakdown of male and female clients. This chart is taken from a report based on an examination of the some 20,000 cases closed during the past fiscal year. We found in our particular situation that if we did some tooling up, we could use the data that was already in our files collected for the original purpose of preparing required Federal

EXHIBIT I

GEORGIA STATE DEPARTMENT OF EDUCATION
OFFICE OF VOCATIONAL REHABILITATION

EFFECT OF LOCAL OFFICE AND POPULATION OF COUNTY ON NUMBER REHABILIATED

Prepared by Research Unit
L. Benjamin Wyckoff,Ph.D., Director
April,1968

Data on population and rehabilitations over a period from 1960 through 1967 was assembled previously.* This study presents a further analysis.

The tendency for larger counties to show fewer rehabiliations per thousand than smaller counties was confirmed by a correlation coefficient of minus .19 between population and rehabilitations per thousand. This correlation is statistically significant ($z = 2.4$) and thus larger than would be expected by chance alone.

The above figure shows rehabilitations per thousand for counties grouped by population. The number with each point indicates the number of counties represented. For example the point marked "57" represents 57 counties with populations between 0 and 10 thousand. These counties averaged 2.35 rehabilitations per thousand. The points plotted above the line show the record for counties with local offices. For example 6 counties with local offices between 30 and 40 thousand averaged 2.05 rehabilitations per

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*Report by Case Standards Program October 19, 1967.

EXHIBIT I, contd.

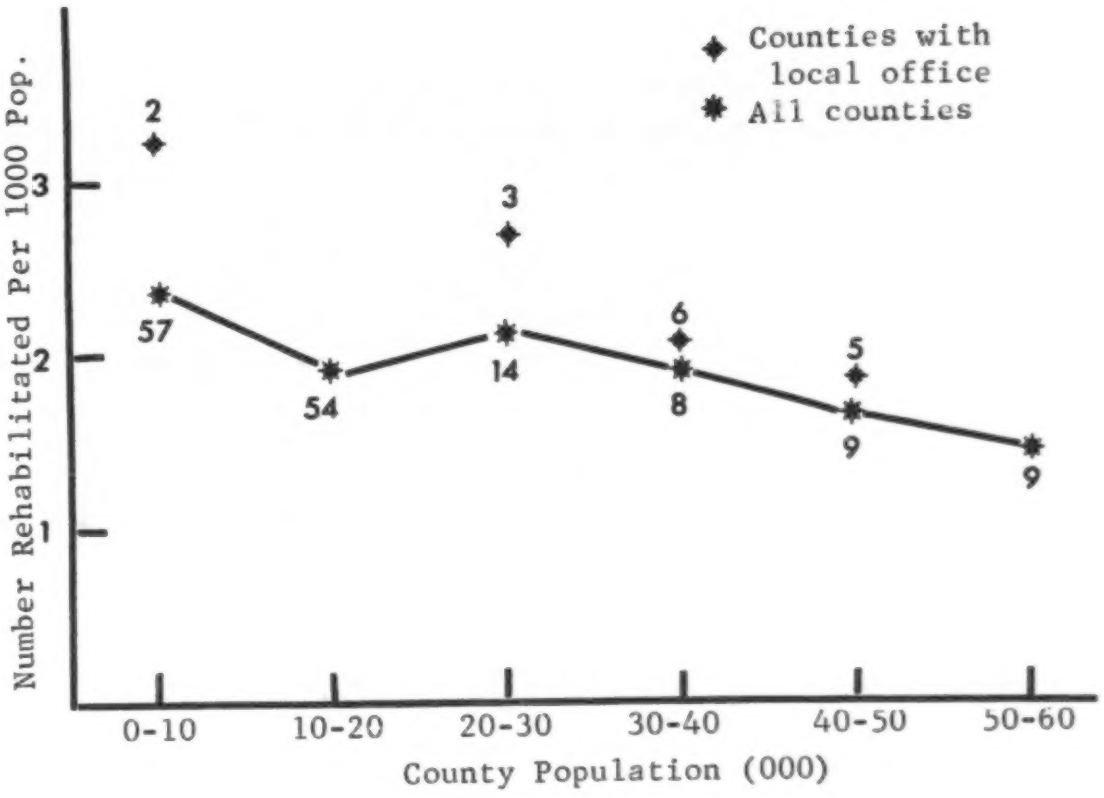


EXHIBIT I, contd.

thousand. It will be seen that, in each case, counties with local offices showed higher average rehabilitation rates than other counties in the same population range. Counties with population greater than 50 thousand all have local or district offices. Thus they are not plotted separately.

A statistical comparison was made for counties with populations between 20 and 50 thousand. 14 counties with local offices showed an average of 2.05 rehabilitations per thousand while 17 counties without local offices showed an average of 1.70 rehabilitations per thousand. A chi-square test showed this difference to be greater than would be expected by chance alone.

DISCUSSION

The trend toward fewer rehabilitations per thousand in larger counties has been observed before and is attributed to the fact that other agencies, providing assistance to the handicapped, are more readily available in the population center. Vocational Rehabilitation appears to be more effective in reaching out to individuals in remote areas than other agencies.

The presence of a local office in a county appears to have a beneficial effect on the rehabilitation program. This evaluation makes the assumption that effectiveness can be measured by rehabilitations per thousand, which is a reasonable assumption for this purpose. The findings support the view that it is advantageous to have counselors stationed where they will be close at hand to contact and serve individuals wherever they are.

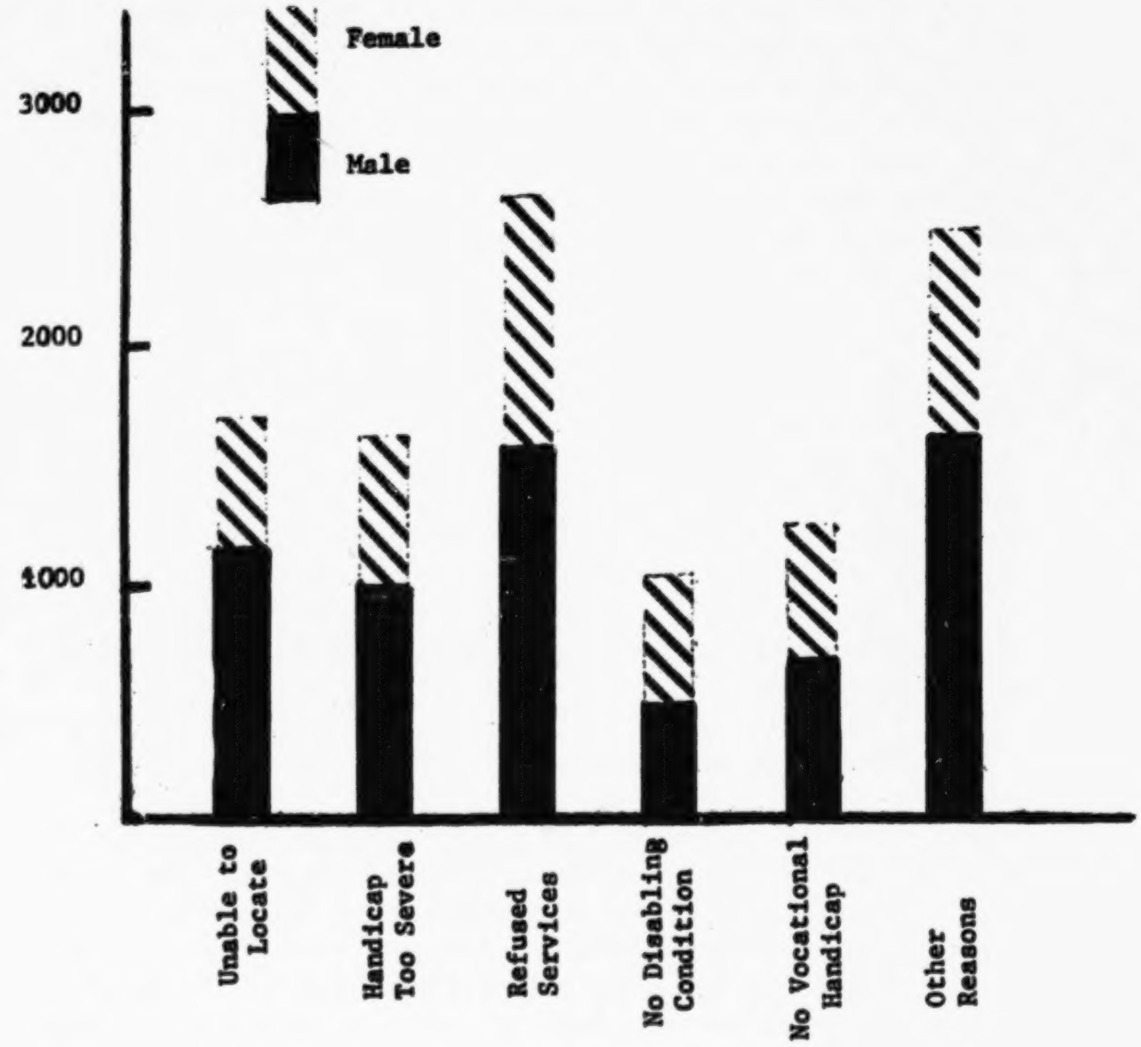
8

EXHIBIT 2

CASES CLOSED REFERRED

1966-67 FISCAL YEAR

REASONS FOR CLOSURE



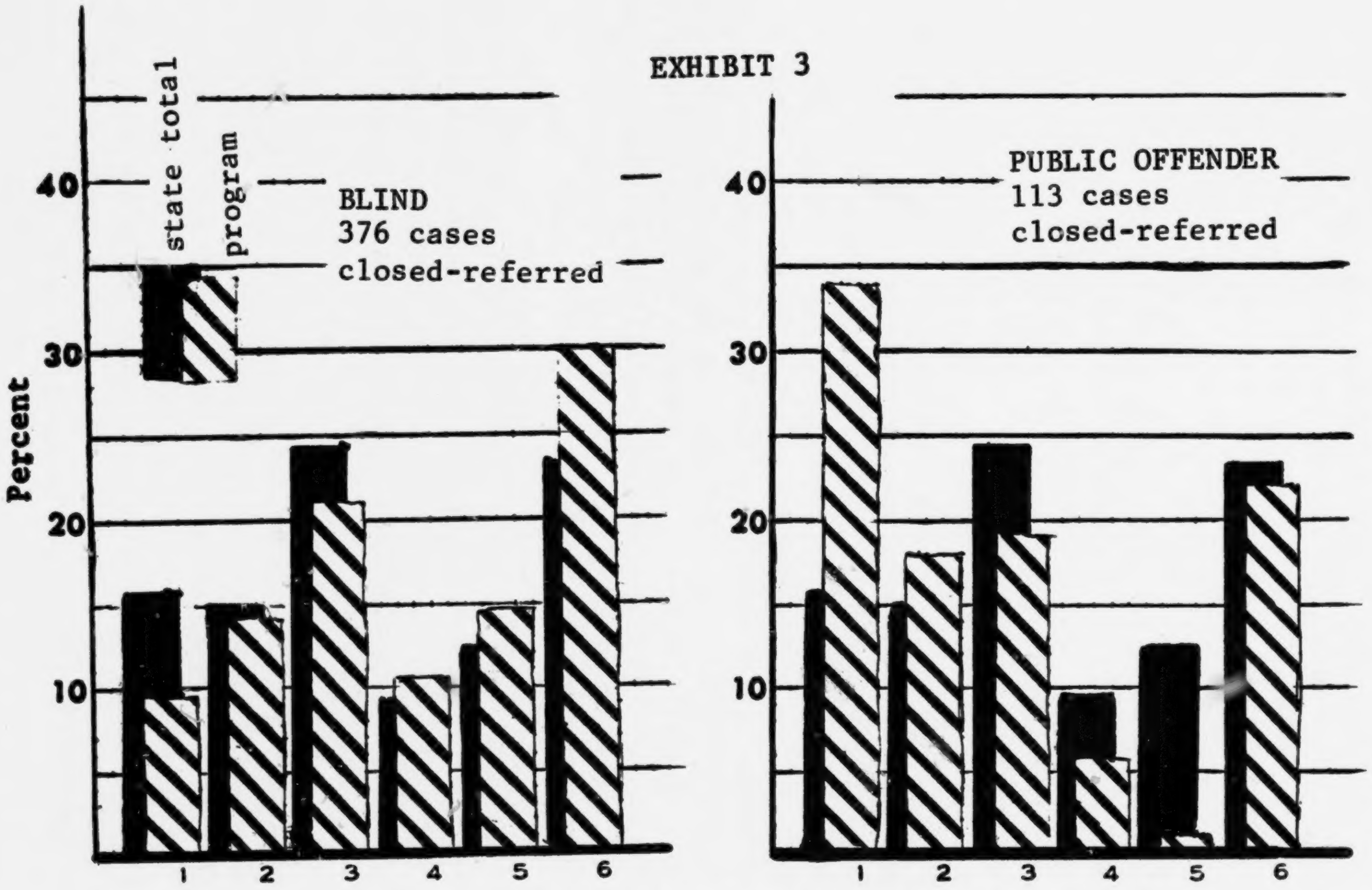
reports. In order to use such data, it was necessary to prepare some computer programs amenable to non-standard uses so that we could ask questions in a more flexible way. The penalty we pay is that the data does not come out in a ready-made complete report as it will for the standard purposes. In our case, the data sometimes comes out, for example, in a page of 50 frequency distributions. It is then necessary to digest this to arrive at a presentable form.

Thus, one of the important functions of our Research Unit has been to develop methods of gaining greater assessibility and the capability of reanalyzing data already available.

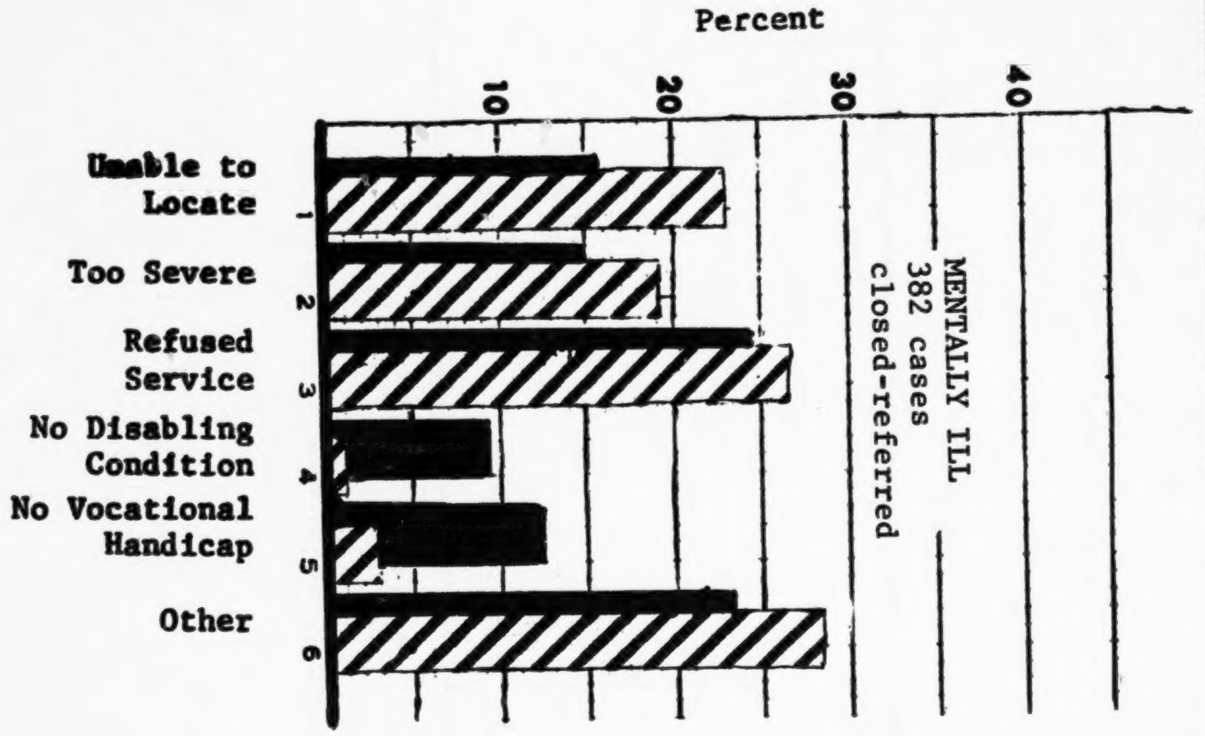
The next chart in Exhibit 3 is another example of a study based on analysis of data in the data processing system, this time showing the distribution of different reasons for closure of cases in special programs in the agency. This allows us to take a look at whether certain reasons for closure are used more often in one program than another and in this case, we find some fairly startling differences in particular programs from the state totals. The interpretation goes beyond what we can go into today, but this is another case of utilizing data already on file with both immediate local interest and long-range purpose. In one sense we were looking at the habits of people in these programs; what do they put down when it comes time to answer the question: "what was the reason for closure?" But it also may give us a chance to find some more general patterns.

Exhibit 4 shows a chart from a report analyzing the disposition of cases from different referral sources. We see the number of cases accepted for service and the number closed without being accepted for service from each of twelve broad categories of referral sources. In Exhibit 5 we have an example of data collected for a specific purpose to illustrate a kind of service which the Research

EXHIBIT 3



REASONS FOR CLOSURE, CASES CLOSED-REFERRED FISCAL 1967.


Percent
10
20
30
40
MENTALLY ILL
382 cases
closed-referred
Unable to Locate
1
Too Severe
2
Refused Service
3
No Disabling Condition
4
No Vocational Handicap
5
Other
6

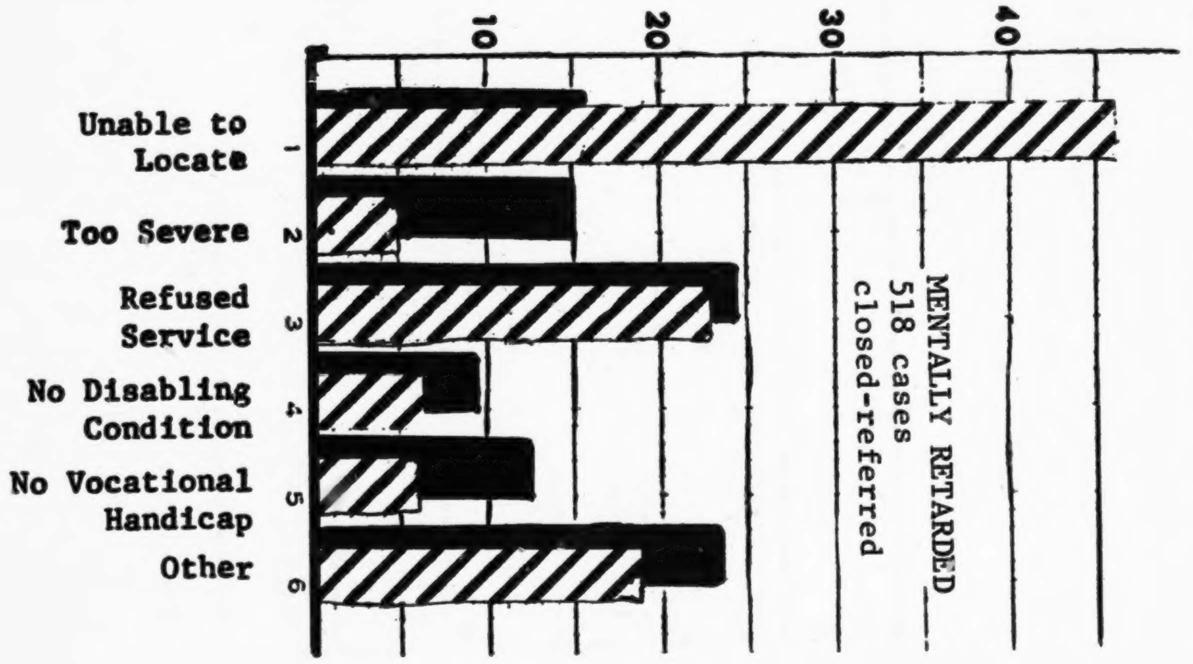
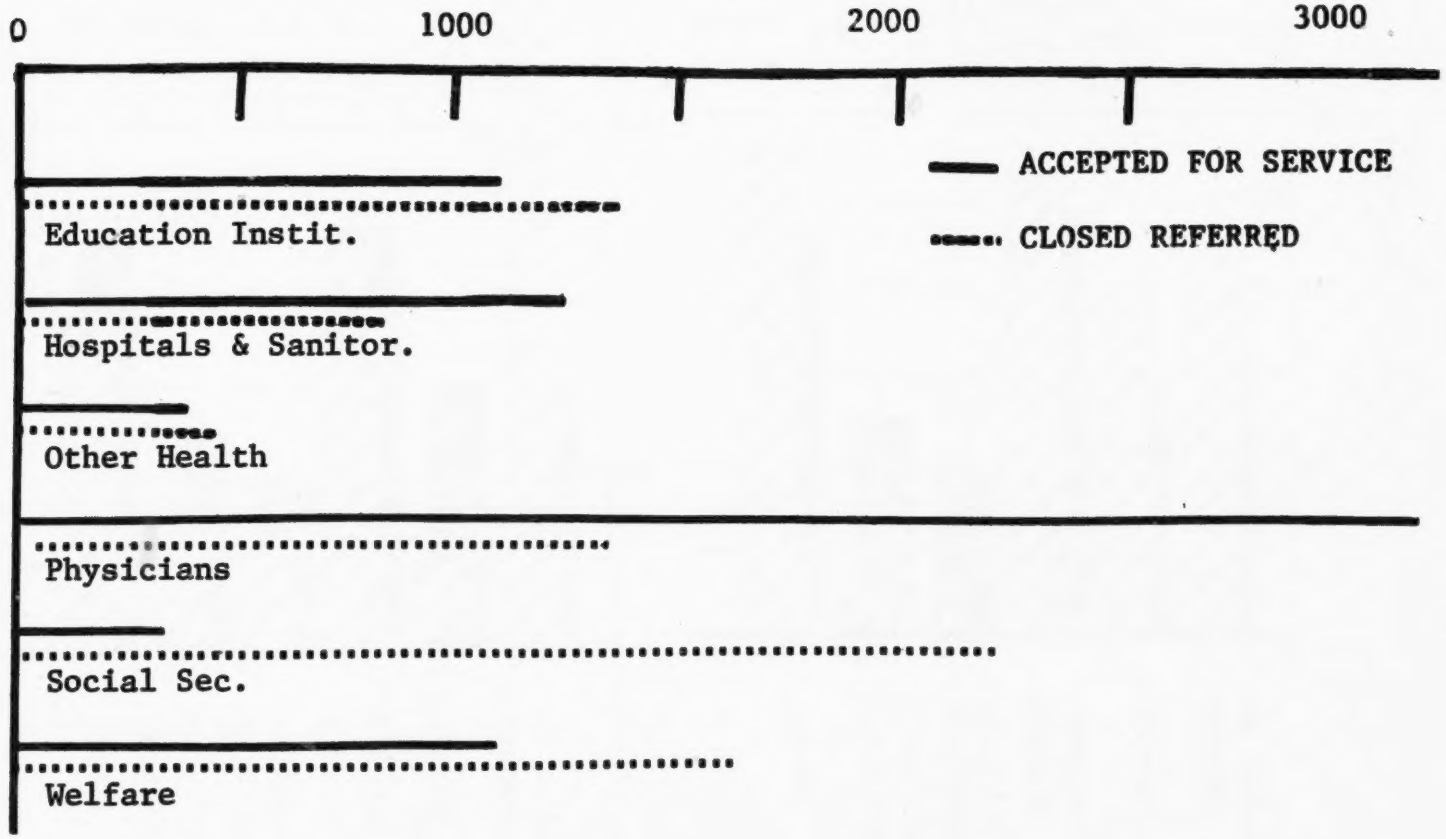

10
20
30
40
MENTALLY RETARDED
518 cases
closed-referred
Unable to Locate
1
Too Severe
2
Refused Service
3
No Disabling Condition
4
No Vocational Handicap
5
Other
6

EXHIBIT 4


0
1000
2000
3000
ACCEPTED FOR SERVICE
CLOSED REFERRED
Education Instit.
Hospitals & Sanitor.
Other Health
Physicians
Social Sec.
Welfare

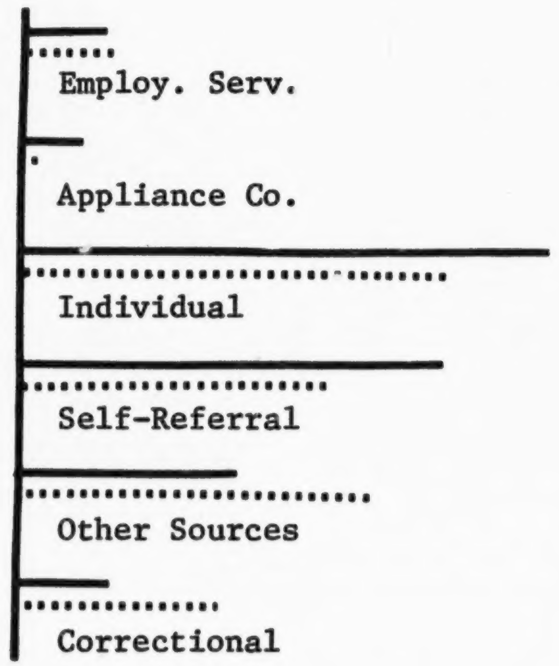


Fig. 1 Breakdown By Referral Source Of Cases Closed Referred And Cases Accepted For Service And Closed During Fiscal 1966-67.

EXHIBIT 5

MODEL CITIES AREA CASES - example of data obtained by research unit, Georgia OVR, for specific immediate application. July, 1967 - April, 1968

		open	closed
Sex	male	337	158
	female	387	140
	total	724	298
Race	white	168	77
	colored	554	221
	not given	2	
	total	724	298
Status	referral only	146	82
	became applicant	578	216
	total	724	298
Selective Service	code: yes	39	26
	no	17	10
	no record	331	152
	not given	337	110
	total	724	298
Program or district	public offender	21	8
	trust fund	17	
	Albany district	1	
	Atlanta district	418	202
	Decatur district	111	65
	mentally Ill	10	4
	mentally retarded	139	14
	blind	7	5
	total	724	298
Year born	1901-1905	8	5
	1906-1910	26	19
	1911-1915	38	30
	1916-1920	62	31
	1921-1925	56	29
	1926-1930	65	29
	1931-1935	82	31
	1936-1940	66	25
	1941-1945	63	23
	1946-1950	118	59
	1951-1955	114	13
	not given	26	4
	total	724	298

EXHIBIT 5, contd.

ATLANTA AREA GENERAL PROGRAM

		July, 1967 - April, 1968	
		open	closed
Sex	male	3073	2660
	female	2676	1734
	not given	2	1
Race	white	3584	2818
	colored	2154	1546
	not given	12	29
	Indian		2
	Other	1	
Status	referral only	768	955
	became applicant	4983	3440
Selective Service	code: yes	455	427
	no	325	193
	no record	3343	2464
	not given	1628	1311
Program or district	public offender		
	trust fund		
	Albany district		
	Atlanta district	3005	2260
	Decatur district	2746	2135
	mentally ill		
	mentally retarded		
	blind		
	total	5751	4395
Year born	1901-1905	61	92
	1906-1910	256	339
	1911-1915	396	441
	1916-1920	503	453
	1921-1925	576	497
	1926-1930	566	453
	1931-1935	585	405
	1936-1940	573	396
	1941-1945	712	509
	1946-1950	1320	757
	1951-1955	93	25
	not given	110	28

Unit can provide to other projects with the organization. The research request was in response to a specific question, and it is the type of thing that comes up over and over again. It was important for a Model Cities Project in Atlanta to obtain some detailed information about rehabilitation clients living in a specific geographical area so that the efforts of our Agency could be coordinated, but not duplicated, with efforts of other agencies. People working on this project within the rehabilita- agency obtained a list of names and caseload numbers of individuals in this geographical area. It was then possible for us to extract from the computerized caseload records descriptive information about these cases. When this data was obtained, it became apparent that it would have realtively little meaning without a basis of comparison. Hence, corresponding descriptive data was obtained for about 10,000 clients in the overall metropolitan area of Atlanta. Included here is one of some eight or ten pages of statistical information on each of these two groups of clients.

In addition to these studies, I would like to mention one other type of study which we have been engaged in: this is follow-up studies on specific groups of clients who have been involved in various specific projects. In these cases it has been necessary to prepare questionnaires and so far we have relied heavily on our counselors to obtain information on their clients which have been closed sometime in the past. We have also been involved in collecting information concerning the characteristics of our own staff for general descriptive purposes and for program planning.

This will give you then a brief outline of the kinds of studies which have resulted in reports from our Research Unit. Our purpose is to illustrate one of the ways that a research unit within a state organization may function. I would like to emphasize that we see this as only one of many possible kinds of emphasis and direction which could be taken. The

Research Unit could become much more involved than we have in experimental efforts in introducing new programs and techniques, either on an agency-wide basis or on a pilot scale or an experimental scale. We anticipate more of this type of activity in the future. However, within our agency at the present time one of the most urgent needs is to provide the capability of making more use of the massive amounts of information already in hand or readily available.

DAY TO DAY

The type of research study we have illustrated here is, of course, quite different from the university based studies appearing in the literature which have been the focus of much of this conference. The content of our studies is much more closely related to the day to day operations and problems of the rehabilitation agency. In many cases the studies were conducted in response to specific requests for information for decision making and planning. It is evident that we are dealing with questions which are not likely to be answered by searching the literature.

Even though our studies are very closely tied to agency operations, the problem of utilization is not automatically solved. We recognize the importance of not only presenting the findings in a form readily assimilated by agency administration people, but of taking the results to these "consumers" directly through meetings and telephone conversations as well as through written reports.

It is our observation that the key to utilization is not the mode or style of presentation, but rather a willingness to enter into genuine two-way communication. Two-way communication means to us that we expect to learn something from our audience as well as hoping that they will learn something from us.

PROCEDURES DEVISED TO IMPLEMENT THE PURPOSE
WON'T WORK

REGINA'S HYPOTHESIS

OPERATIONS RESEARCH IN STATE VOCATIONAL REHABILITATION AGENCIES: ITS STATE AND POTENTIAL.

PART 2 CHARLES S. CHANDLER, PH.D.

DR. MUTHARD:

Dr. Chandler is research director of South Carolina's Vocational Rehabilitation Department, and now directs a demonstration project establishing an operations research component in his office. Dr. Chandler will now discuss the project.

DR. CHANDLER:

The title of our session is Operations Research in State Vocational Rehabilitation Agencies: Its state and potential. I have not attempted to make an inventory of the state of Operations Research; however, I would add this little perspective. As you all know from reading the literature and scanning the project reports, there have been some areas -Michigan, Wisconsin, Boston-where people have conducted work similar to operations research over the past 10-15 years. Some of it bears on the Vocational Rehabilitation effort.

In Michigan back in 1956, there was an Extension Improvement Grant to establish a research unit. They have had, since then, R&D projects in which counselors have surveyed several disability groups and come out with reports on the rehabilitation of diabetics, neurological disorders, multiple sclerosis, etc. In short, they have been taking stock of the situation in their state with respect to several disability groups. Minnesota had a couple of R&D projects: Nos. 329 and 457. New York had one. In 1961, there was an extension and improvement Program in Washington, D.C. All these serve as a backdrop for whatever is happening in research today.

Within our own area, we have had individuals who have been associated with the universities of this state. Some of them have been involved in doing research, or in helping agencies look at certain aspects of its operation. I know this has been true for several years in Alabama; there have been several people that I have known in Georgia, and some in Mississippi.

A couple years ago, Virginia and West Virginia applied for grants to establish Operations Research Offices. They provide a format that can be used for this kind of project. Personnel have usually consisted of a coordinator of research and a secretary in the agency. You can think of them as a nucleus of other programs to come. We in South Carolina have been considering the idea for several years, but never really got down to brass tacks on the office locations, budget, secretary and so forth, until recently. We have now submitted a proposal.

I will go over some of the elements of this proposal in just a minute because it does have several major objectives which coincide with the needs we were talking about yesterday-the need for routine kinds of data gathering. I do not want to de-emphasize the value of these low-level operations because, at least in our state, we have a lot of unused or ungathered information. I have a great deal of information in my office that the fellows at all levels of the program would love to have, if I could only retrieve it upon demand.

For example, someone may be out to give a speech on what our state has done in Special Education in the past few years. The only problem is that I have got 37 piles of data and those figures are in one of them. I know there are a number of these piles that they are not in, but if someone wants this information in a hurry-I just do not have time to start rummaging through the rest of them. So this information is not used to help anyone inside or outside the program. Instead it just lays there, turning slowly into mold. But, I would venture to say, my case is not unique. There is a lot of information in a lot of offices that has little or no chance of being translated into action because it is in piles and closets.

THE PROPOSAL

I want to discuss in detail this demonstration of the Research Director's role in an Operations Research Office as well as in Program Development. The major objectives of the project are:

1. To stimulate and coordinate research,

2. To utilize and help the state agency to utilize research findings, and

3. To do research and conduct demonstration type activities.

The need, as we see it, is tc get research, university and rehabilitation people together. There have been other sessions in this region which have gathered these people together. We see this as one function of the Operations Research Office. There is some information that the Greenville area supervisor has neither time nor know-how to locate data he needs-whether it is in his own records or in follow-up reports at the state office. My feeling is that somebody needs to go to the Greenville area and help this man. Greenville is close to Clemson and Furman and other universities in the state where there are professionals in psychology, sociology, management, etc. We should try to get them together with the rehabilitation personnel and help them establish the kind of relationship where they can work together.

I want to tour the state, mobilizing people on behalf of our area supervisors. They need people who can help them to look at the operations of the office and dig out some information for day-by-day planning. This is one goal of an Operations Research (OR) Office as I see it.

I hope we can conduct some research conferences. These may not be high level conferences, but in the beginning we need some sessions to help our rehabilitation personnel feel a little closer to and be able to utilize the information that we pass on to them.

I think we should have some workshops at state or area levels. Some areas have enough counselors to make it pay if we took a few hours at staff meetings to go over some of the material we send out. Let them look at it. Let them ask questions about it. Let them try to interpret some of this information and let us see what they are doing with it. That will give us a basis on which we can develop a program of orientation and in-service training in the utilization of research.

I am not very familar with some of the information that we send out. I know that many of the employees in our department have been in the job for less than two years. I think we need help getting familar with this information and learning to interpret it more accurately.

We see in this office a need to stimulate some research, to bring some of these people together, and to stimulate research by the rehabilitation counselors themselves. Some people told us yesterday of counselors who had been interested enough in a problem to collect information and do something with it. This needs to be encouraged. I think that this OR Office can help create the necessary climate.

We see a need to help counselors utilize research. We need to conduct an ongoing review of some current Research and Demonstration programs, passing this information on within our state. Sometimes we are going to have to think about target groups-counselors, supervisors, possibly even some people that our counselors are working with. Our rehabilitation agency is trying to help a variety of people. It may be that we can help by giving information about what is going on around the country and about successful programs, etc-to some of these people.

I think that sometime-it will not be in the immediate future-the Operations Research Office will see a need for some trials, some demonstrations, some programs to build upon some of the information that we have gained. In other words, when we have enough information to give us a hunch, we will need a satellite demonstration or research project to test it.

COMMUNICATION OF INFORMATION

It dawned on me as I sat in our training sessions, as I have heard about some training sessions in other states, and as I have sat in our staff meetings, and as I have heard about staff meetings elsewhere, how very little imagination we use in the dissemination of information. We have used the old techniques of speaking at people that the caveman used and we really have not moved very much beyond this. And today, where do we really the most impact? I respond most to television. You see people walking around everywhere, humming and singing commercials. They can tell you about these stories, these brief dramatic scenes. The "Specials" have given me new insight into the problems of this country. Perspective that I can use to go ahead and do some work in rehabilitation.

We do not really use visual aids (AVI) in rehabiliation as we should. We do not have many people in the program who know very much about AVI. This has not been one of the things that we have ordinarily hired people for, and yet I think it is crucial to have someone to help us use and develop techniques of getting information across. I think we are on the right track. The Research Utilization Branch is on the right track with their research briefs.

I sometimes get something like this 6-page research paper from the Health Information Foundation. A little bit of color in the photographs made me stop and read this thing. I would not have if it had been a 6-page mimeograph job. I just simply would not have done it! I read this because it had a little color. I started reading right by the charts and graphs, then I decided to go all the way back to the beginning and read it all. We need to increase the odds that rehabilitation personnel will read the literature. Unless they do, it cannot be translated into any kind of action. Now this is true for the projects, studies and research reports we abstract into a page or two, and for the longer reports as well. I think we have a responsibility to make some of the longer reports a little more palatable (i.e., readable). You can say that we should not have to do that. They are professional people and if they are interested, they will read it on their own.

I am currently interested in state-wide planning, and I have a stack of great, big fat documents from other states on my desk. I have not had time to read those big fat reports. I look at them. Think about them being mimeographed and so forth, and I just put them off.

We tried something a while back. When we wrote a final report on a 3-year study of rehabilitating public offenders, we tried to write it and print it in a way that might increase the odds that somebody would read it. Of those who picked it up, we hoped they would read at least one more page, then they would have otherwise. There are many people who are not going to go through a complete report, but it would be nice if we could increase their attention span by one more page.

We put some color on the cover. We used some sketches partially to symbolize ideas and partially to break up the type. We used pictures to show what was going on. We could have done it without the sketches which we just swiped out of newspapers, but when we talked about a crime, we showed a picture of a guy in a car talking to a guy in a service station. This conveys the idea of a probation officer as he gets out and around, not just as he sits in his office. When we talked about going through the file and calculating some stuff, we showed a girl standing at a calculator. This sort of draws the eyes to the text.

What pleased me most was that people picked this up, read it, and said, "I want to put one of these into the hands of each member of our Statewide Correctional Rehabilitation Task Force." So we sent them out. Our postage bill has been very, very high. To make a few of these people look at some of these results and invest some time in reading the reports, we need to exercise more imagination. This is especially true when we circulate these reports to people within our own state who might not immediately know something about it. We really do need to get people involved in this aspect of research utilization.

THE COMMUNICATIONS JOB

We are talking about Operational Research. We are talking about doing some research and stimulating others, but we are also talking about communications. I was asking some questions at the State Printing Office and he gave me a card. The inside said, "Communications-that's what it's all about." And it is true.

In our program more communication is needed at all levels. We must have sharing and imparting, from one part of the program to another. Communication among supervisors, to trainees, and counselors in the program is essential. We need to pass on many messages, internally within the organization, and externally as well. We need to pass on knowledge.

We need to develop the ability to ask sensible questions. In our state, we need to gather some information before we get carried away in too many complex investigations because we have not really asked the sensible questions. We know some areas that need to be explored, but we do not really know enough about these to formulate the best kinds of projects. We need to spend some time gathering this king of basic data. This kind of information is needed in a program to make sound day-by-day decisions, the operational decisions.

We also need this kind of information to improve our policies, our policy making. In other words, we need this information at a higher level. There is a need for it at the supervisory and administrative level. We desperately need to develop a storage and retrieval system for the information we have. As Dr. Dumas was saying yesterday, we need to collect, process, store and retrieve this information-I have my 37 piles-in a systematic fashion while keeping our short and long range goals in sight.

We need to involve our administration and supervisory personnel in this process of using information in program planning and decision making. We need to get everyone thinking about this process of identifying problems, getting appropriate perspectives, seeing the problems in context, doing some initial assessing, getting some initial factual information, thinking up approaches to possible solutions, making a decision to try this, taking some actions, and reassessing the results. We need to establish this process as a routine mode of operation.

We have to do this for the future. I think it is advisable to follow some of Ev Rodgers' suggestions and consider the "receivers." It is also important that we establish within our agency that everyone is going to have use this kind of information. We are going to be a lot more computerized 15 years from now than we are now. We ain't seen nothing yet.

REFERENCE POINTS

I personally have these constant reference points as I approached this job:

1. This is in a social change context because both our society and our agency are involved in change. Whatever we do and whatever we look at, we had better look at it in a social change context (i.e., innovation, in terms of change agents). Some people may not like the idea of a "change agent," but we need full-time innovators. In other words, we need people whose responsibility is innovation, updating and improvement within our agency.

2. A constant reference point to me is the concept of social systems. We are talking about a complex organization and a complex area of concern, rehabilitation. You make one move and it affects everything else. The moves that South Carolina has made in the field of education have greatly affected our ability to recruit new personnel. Traditionally, former teachers, who work in rehabilitation, have gone around to schools to recruit other teachers. This has been our basic source of people. The source is no longer adequate. In addition, with all the new federal programs, people in education get paid more nowadays. Some principals and assistant superintendents of schools are getting paid more than our area supervisors. We cannot steal from them anymore. We have got to look elsewhere. We need to consider every part of the program in a context with all the others.

We need to look at our whole job in terms of human growth and development and get away from a military model and, with all due respect, a medical model. We must see these needs for additional manpower, re-structuring of our organization, better leadership, computerization, re-definition of roles, etc.

In order to do all these things, we need some information about them. The more information we can get, the sounder these plans can be. I see this as part of the mission of the Operations Research Office. I do not plan to do it all myself, but to involve other people in obtaining the kind of information that can help our administration and our supervisors make the changes that are needed, to improve, grow and extend.

(Editor's note: Dr. D. R. Chandler's proposal was funded since the date of the conference.)

CONSIDERATIONS IN THE PREPARATION OF R & D GRANT APPLICATIONS

PART I EDWARD M. HOLMES, M.D.

DR. MUTHARD:

Dr. Holmes addresses the problem of preparing R&D grant applications from the perspective of the Social and Rehabilitation Service regional office. He is one of the key persons that you and other persons within your states negotiate with in the preparation of grant applications. As I see our role, neither of us is in a position to tell you what to do, or, in effect, to advise you to the extent of telling you what kind of problem you should do in what way, or to give you any assurance or speak for the likelihood that your application will be given favorable consideration. I do think, however, that some of our observations and experience can be used to prepare grant applications which will be given greater consideration and have a higher probability of being funded.

DR. HOLMES:

When Dr. Muthard and I first discussed the content of this session several months ago, we did not know quite what to call the session. In the end we concluded that it would be appropriately termed "The Preparation of a Research and Demonstration Application." We further concluded that the session should be informal and provide practical hints which may assist you in the development of an R & D application.

Before discussing these points, I would like to bring you up to date on the progress that has been made in the realignment within the Department of Health, Education, and Welfare which created the Social and Rehabilitation Service. Under the realignment the Vocational Rehabilitation Administration became the Rehabilitation Service Administration and is one of the five bureaus that comprise Social and Rehabilitation Service. The other four components, Medical Services Administration (which administers Title XIX Medical Program), Children's Bureau, Administration on Aging and the Assistance Payments Administration along with amalgamation of these services great emphasis is being placed on rehabilitation with particular reference to the socially and economically deprived citizens of the country.

There have been certain other changes which may be of interest to you. Dr. James Garrett, formerly Associate Commissioner, Vocational Rehabilitation Administration, has been designated Assistant Administrator, Office of Research and Demonstrations, for all of the component parts of Social and Rehabilitation Service. In his new capacity he will coordinate research and training activities of the CB, MSA, RSA, AOA, and the APA.

The old Advisory Council to VRA has been renamed the SRS Advisory Council by Miss Mary Switzer, the administrator. The committee structure for the sections have remained pretty much as they have been in the past. Thus a R & D project will go up to the Advisory Committee through the appropriate study sections. At present the major funds available for R & D projects are in the RSA. There are some funds available through the CB and through the 1115 and 1125 programs for demonstrations in the AOA and APA program.

FUNDING

It may be well to outline other programs that can be used to explore on a state and community level the RSA program.

1. RSA expansion funds can be used to expand existing services. While it is not permissible to use these funds as support for specific research projects, there is no objection to utilizing a good expansion project such as the Emory Alcoholic Project, "The Chronic Court Drunk Offender," for the collection of data as a part of the evaluation procedure nor would there by any objection for the staff of this project to write progress reports or scientific papers based upon their evaluation.

2. In addition there are Innovation funds which can be used by state agencies to explore new ways and means of improving services to the handicapped. Projects under this type of funding as they are appraised and evaluated can be used for progress reports and frequently lead the way to ideas that could be studied in depth through research funding. However, the basic funding for R & D projects is through the same channel of the Research and Training Section of RSA.

As you probably know there has been considerable impetus in research within Region IV within the last five years. All of the ten Medical Schools have research projects. Nearly all of the state agencies have on-going projects that are financed through research funds dealing with various aspects of the rehabilitation process. On-going projects are being conducted on the rehabilitation of the public offender, the mentally retarded, welfare recipients, socially deprived, and nearly every aspect of physically and emotionally handicapping conditions. The University of Alabama at the present time has five on-going clinical rehabilitation grants and has had two Pilot Planning grants which have been used to develop full-scale research projects or programs of importance to rehabilitation.

In this region, in addition to the Research Institute directed by Dr. Muthard, we have two Research and Training Centers-one located at Emory University, Atlanta, Georgia, and the other at the University of Alabama, in Birmingham. These centers have rather large budgets that permit them to function in three dimensions--research, training, and service. Perhaps the secret of the expansion of research activities in this region has been the splendid cooperation that exists between the state directors of the Divisions of Vocational Rehabilitation, the faculties of the universities, and the staff of the regional office wherein through the process of team work worthwhile projects have been developed that have been mutually beneficial to the states and to the educational centers.

One of the interesting developments has been the cooperation among the agencies within the DHEW. There are several instances wherein the RSA has made grants to further develop the rehabilitation aspects of clinical research that is being performed by departments in the universities,financed through Public Health funds and vice versa. At the University of Alabama the Public Health Service financed the Dialysis Center and the RSA expanded this work through research funds to evaluate rehabilitation of patients on dialysis. At the same institution, RSA financed the cerebrovascular accident study, and the PHS came in on it to develop clinical aspects which were not possible under RSA funding. There have been instances of cooperative efforts with the CB and the Rehabilitation Research Section. These coordinating efforts on the part of the staff should be continued so that all research projects clinical, basic or a demonstration can be carried on to an appropriate end point.

Perhaps mention should be made of another means of funding which cannot be used for research, but is of great value in the development of clinical and rehabilitation programs. All of the states in this region except one are financing under their Section 2 Service funds, Cardiovascular Rehabilitation Facilities. These projects were established primarily to improve clinical services to clients of the agencies but by careful record keeping they lend themselves to evaluation and lead to research studies. These projects are also of great value in training fellows, residents, interns, and paramedical staff.

THE APPLICATION

To get down to the basic reason for this part of the program, to wit,"The Preparation of an Application for R & D Projects," there are two methods of submitting a formal application--both are equally permissible. In the first instance the investigator can submit his application direct to RSA, Washington, requesting the state director only to approve the project by a supporting letter. The second method which has been successful in this region evolved out of the teamwork approach. Under this method the investigator working in cooperation with the staff of the State Division of Vocational Rehabilitation in an informal narrative describes the project that he wishes to undertake and documents the approximate amount of funds needed to successfully complete the project. This informal narrative is reviewed in conference with representatives of the State Divisions of Vocational Rehabilitation and the regional office and informally submitted to RSA, Washington, for staff review. When the comments of the regional office and the Washington staff are collected, these are submitted to the investigator who has the option of accepting these suggestions or of rejecting them. In all instances when these suggestions are accepted and incorporated in the formal application, the project has been approved by the Study Section and the Advisory Council and appropriately funded.

There are several Do's and Don't's that are pertinent to the development of a R & D application.

Literature Review. Perhaps the most common error made in submitting an application is the failure of the investigator to review the literature to determine whether or not the research he wishes to undertake has been done before and with what results. Thus, it is of utmost importance that as a first step, the literature on subject should be carefully reviewed. Here the annotated listing of completed R & D projects is of great value.

Flatter's Mouth. The narrative of the application should be concise and to the point. In a fair number of instances a good idea has been rejected by the Council because of the investigator's insistance on a long and lengthy narrative. Occasionally the narrative becomes so involved that it is virtually impossible to actually determine what the investigator proposes to accomplish if his application is funded.

At the Medical College of Virginia where I was teaching for 20 years, we had a term called "Flatter's Mouth Syndrome" and occasionally would spring it on students during the course of ward rounds. The student would be informed that the patient had "Flatter's Mouth Syndrome." Usually they would reply, " That is something new, what condition is it?" To which question the dean or myself would reply, "It's that rare medical condition where the weight of the hospital chart exceeds the weight of the patient."

To be brief, a good application is written in clear and concise English and follows the guidelines laid down by the agency.

Budget. To submit an application with an unrealistic budget immediately starts the review with prejudice. RSA functions on a limited budget. Each year a limited number of projects are funded in the medium range of $50 to 90 thousand dollars. Occasionally important and very worthwhile projects are funded in amounts in excess of $100,000 and several have been funded in the range of $200,000. Because of budget limitations the average falls into the medium range, thus the investigator should request only the funds, personnel, and equipment essential to perform his objectives.

Goals. A fair number of investigators are reluctant to adapt the subject of their study to the basic objectives and goals of the VR program. If the investigator would accept the basic objectives of the R & D program of the agency, considerable energy and time could be saved as follows: If the investigator wants to submit an application to conduct a study that he is acutely interested in, his first step should be to determine the agencies that might favorably consider his project. He should be conversant with the objectives of the National Institutes of Health, the PHS Community Demonstration Projects, RSA, the CB, and the volunteer foundations. The basic objectives of the R & D Program of the RSA is simply this: the project must open new areas or demonstrate new approaches that will help the State Division of VR serve handicapped individuals with the ultimate goal of placing them in gainful employment. This does not mean that the agency will not consider basic research or fund pure clinical research but whatever the scope of the project it must be geared to the rehabilitation of individuals to the optimal level of productivity possible and with the hope of placing them in gainful employment.

Methodology. A problem frequently encountered is the failure of the investigator to clearly delineate the methodology for his study. It is amazing how many applications are received wherein the basic objectives are excellent but due to the failure of the investigator to develop the steps he will take to accomplish his objectives, the project is rejected. A concise outline of what the investigator intends to do linked to the staff required to accomplish the objectives and how the project will be evaluated is of great significance to the reviewing committee and staff.

Private Objectives. Occasionally projects are submitted wherein it is obvious that the investigator has a personal objective. Sometimes the objective is to pursue a hobby or study a narrow area of laboratory or clinical medicine in which he is interested. Other times it is merely a futile effort to obtain funds to carry on his existing staff.

Stubbornness or Pride. Stubbornness based on the investigator's pride concerning his past scientific achievements frequently defeats agency cooperation. Pride in accomplishments is certainly justifiable but when the investigator persists in unrealistically holding on to his ideas of the scope of the study to the point that he is unwilling to comprimise, it becomes a problem to the staff who are trying to assist him in the development of a reasonable project that will fit the funding agencies' program objectives. I know of projects that have been turned down because of the investigator's unwillingness to use terminology that is acceptable to the staffs of Vocational Rehabilitation. There have been instances where projects designed to emphasize the team approach to rehabilitation wherein the investigator will decline to include a VR counselor or a trained evaluator with the end result that the review committee frequently decides that the project is one that should be funded by another agency.

Consultation. Frequently investigators who are departmentally oriented will not seek consultation concerning the methodology or the statistical format for his projected study with the ultimate result that a poor project is submitted. All of the universities in this region have well qualified and competent faculty who are conversant with research methodology, evaluation, and statistical approaches. If the department oriented investigator would seek consultation within his own university setting, it would do much to improve his project and in turn increase the chances of it being funded.

The Small Project. Lastly, R & D projects can be successfully completed on small budgets. One young vocational rehabilitation counselor at the University of Alabama on his own time and without funds did an excellent evaluation study wherein he followed up patients accepted by the agency upon referral from the outpatient department. These clients were followed up to placement in employment and their income achievements were documented. There are many opportunities to study pertinent areas of the vocation rehabilitation processes that need not entail large expenditures of funds. Further, in instances where the preliminary work has been done by an individual or a staff or a department and the results are promising, it is much easier to develop such work into a full-scale project that can be formally submitted for funding.

In conclusion, I would urge that the staff of the medical centers and universities of this region and the staff of the State Divisions of VR work on a cooperative basis and that they explore to the fullest the informal approach to the submission of a formal project application. —

THERE ARE CO-EXISTING ELEMENTS IN FRUSTRATION PHENOMENA WHICH SEPARATE EXPECTED RESULTS FROM ACHIEVED RESULTS

FINAGLE FACTOR AND DIDDLE'S CONSTANT

CONSIDERATIONS IN THE PREPARATION OF R & D GRANT APPLICATIONS

PART 2 JOHN E. MUTHARD, PH.D.

DR. HOLMES:

Now I return you to Dr. Muthard, who will discuss his views on R & D Grant applications.

DR. MUTHARD:

Since Dr. Holmes has provided a general overview of the grant application process and the most serious deficiencies of applications for research support, I will be brief in repeating some of his salient points and listing some of my thoughts regarding grant applications.

With respect to assisting agencies in the preparation of research and demonstration grant applications, the University of Florida Regional Rehabilitation Research Institute staff see themselves as having a responsibility for consulting with state agencies in Region IV. Such assistance would be directed toward enabling the agency to develop a sound research and demonstration proposal; we would not presume to prepare applications. The expectations of SRS, as I have read them in the official memorandums that date back to 1957 when RRRI's were established, indicate that about 5 to 10 percent of the staff time of the RRI's would be devoted to this task. There was and has been no expectation that RRRI staff would conduct research for state agencies or regional offices. The UFRRRI would be willing to undertake a facilitative role in order to assist several states collaborate on a project which requires cooperative effort. We are ready to help state agencies in our region do this kind of research. We also hope to assist agencies in their efforts to utilize research. When requested, we may be able to suggest new ways that the state agencies might research continuing problems, or new information which may bear on the problems that they have.

Let us turn now to the problem of Research and Demonstration Project applications. Dr. Holmes has already given you many valuable suggestions about them.

As a member of the General Research Study Section of SRS, I have had a post-graduate seminar on the evaluation of grant applications. A large portion of the projects--about two-thirds--are really demonstration projects. They present more problems to the Study Section and SRS staff, it is my impression, than others, because they frequently do not provide for a novel attack on a rehabilitation problem. As Dr. Holmes has said, they often are re-discovering an old approach to a problem dealt with elsewhere many times. Or what they propose is only a minor variation on a widely used approach. An example that comes to mind is that of work evaluation by using job samples. There have been all kinds of variations on that theme,which at this point is 50 years old in the industrial world and applied in rehabilitation about 20 years.

DEMONSTRATION

Demonstration grant applications often fail to establish how what the investigator wishes to demonstrate has significance for other rehabilitation agencies or settings. Often demonstration projects seem to me to be motivated almost entirely by the desire for continuing or expanding service programs. Either implicitly or explicitly, many applicants say, "We've already started something," or, "We have this good idea and the community is back of it, but now we're looking for money." In a number of projects, the relationship between the demonstrations and the evaluation or research component, is quite tenuous. It is often clear that the applicant has not thought how he would establish that the demonstration project proposed can indeed make a contribution to the vocational rehabilitation service program of the country. By reviewing the proposal and the budget, it often seems clear that a large professional staff is to be funded for a two- or three-year period, but there is little provision for evaluating the project. Such applications are suspect from the start and seldome secure approval.

It is my impression that only a minority of the demonstration projects incorporate a sound research component. Relatively few provide for careful evaluation of whether or not the demonstration did work, and whether it's methods can be used in other settings.

LINKING GOALS

At the risk of being repetitious, I would like to mention the difficulty that many investigators seem to have in relating the significance of their projects to the mission of SRS, RSA and the state programs. It seems to me that if what you're doing or want to do does not have potential for meeting the needs of the agency, and if you cannot link up the possible consequencesa and outcome of your research to that agency's goals, then maybe you are applying for support from the wrong agency or the wrong institution. I really do not see that asking for relevance requires an investigator to modify his basic scientific goals or even change his study. I believe that applicants have an obligation when they ask an agency like SRS to fund their proposals to relate how their projects will make a contribution. They should not expect reviewers to infer their projects will be of value to rehabilitation. Applicants should learn the objectives of the agencies from whom they solicit support and wish to relate their ideas to that agency's mission.

I think the need for a thorough research plan has been talked about. The checklist of questions which we distributed are essentially the same kinds of questions that people in RSA regional offices ask, that the SRS staff and study section will ask, and that ultimately, I'm sure the National Advisory Council on Vocational Rehabilitation. Frequently, the problem isn't clearly stated. The relevant literature is often either not cited or only sparingly considered.

Since it may be helpful we are appending the "Checklist of Questions to be Asked About a Research Proposal" to this report. (See Appendix A for the "checklist and a supplementary paper by Dr. Muthard)

IF ANYTHING CAN GO WRONG, IT WILL

MURPHY'S LAW

AND, AT THE WORST POSSIBLE
TIME

GROUP SESSIONS

RECORDERS:

GROUP ONE: DON HAY
GROUP TWO: ELLSWORTH BORQUE, PH.D.
GROUP THREE: NEIL S. DUMAS, PH.D.

This report on the group sessions compiles the recorder reports and augments them with material from the tapescripts. It begins, as did the sessions of recorder reports, with short remarks by Mr. Griffis.

MR. GRIFFIS:

At the October meeting of the NACVR the question as to how many separate projects should be supported in private agencies led to a review of the whole Operations Research Program. The SRS has funded about eight Operations Research Projects: Arkansas, District of Columbia, Florida, Ohio, Oklahoma, Puerto Rico, Virginia, West Virginia, Michigan. In addition, Massachusetts and New York have had projects which SRS did not fund.

Letters were sent to the DVR agencies asking for their impressions and possible improvements of the OR projects. All of the agencies responded. They felt, in effect, that the projects should be continued. There was, however, a divided opinion on the need for a doctoral level person to be in charge.

NACVR conclusions were that those agencies which do not feel they can recruit, pay, stimulate, and utilize a doctoral level person--the agencies which cannot get this person--will not need an Operations Research Office. The meaning of this is that these responsibilities should be limited to a doctoral level person, and, for those offices which cannot get such a person, the Research Utilization Specialist should suffice.

The rationale for the Operations Research Program is that all research cannot be done in the State agencies; therefore, someone is needed to keep count and identify researchable problems, and to stimulate, encourage, and consult with other researchers who will do the required work. It would be desriable for the doctoral level person in charge of the Operations Research Program to hold a part-time academic appointment, with a minimal teaching load, concurrent with this job, so there can be a liaison between the academic and the operational.

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GROUP SESSION I

TECHNIQUES FOR PROMOTING THE USE OF RESEARCH AND DEMONSTRATION RESULTS

A review of what States are doing at present revealed that while there is not a planned distribution program literature is being made available to counselors, supervisors and administrators. Circulation of Research Briefs includes use in course work and inservice training programs. State-of-the-Art monographs are also distributed.

INFORMATION DISSEMINATION

At regularly scheduled meetings of counselors, one counselor makes a presentation to the staff of the material in a journal article; he also evaluates the applicability of this information to counseling. Counselors take turns being responsible for the values to be found in all relevant literature and reporting this to the other counselors at regular intervals. Such procedures help unite as well as inform the staff.

The Georgia Bulletin* publishes two-page research briefs with minimal use of sophisticated statistics. Counselors and professional people in the Georgia agency are encouraged to do research for publication in the Bulletin; this gives them a more personal interest in research literature. In addition, the report gives a bibliography and short history of how the problem arose for the researcher.

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* Tom Porter (see roster) would welcome inquiries from anyone who would like to be on the Bulletin mailing list.

INFORMATION EXPLOSION

"I get kind of bogged down and bored at times in what seems irrelevant to my current interests. A counselor's time is so precious that unless an article is relevant, he just won't be motivated to read it."

Field of Interest Registers:

Could be used to route the mass of information currently available, and to introduce economy in its use. A caution accompanies the recommendation: information not utlized at the time of reading can become part of a decision-making framework or influence decisions five years from how. It is difficult to comfortably dispose of "excess" information.

Value List:

Unintroduced information just tossed on the desks of busy counselors is not likely to be read. A brief list of specific values offered by that particular paper could be attached to the counselor's copy as an incentive to read it.

Pendulum Expert:

In the proliferation of material there is a like proliferation of conclusions about the same problems. If an individual modified his practice with every article, he would be swinging like a pendulum.

Adequacy:

For the counselor to answer, "Is this a valid design? Is it statistically checked out?" and so forth, he needs to be more expert than the experts he's reading.

COMMUNICATIONS METHODS

"We are using the same kind of communication techniques that the cave man used--talking at them. We ought to have the counselors sit right down, ask questions, and get answers all in the same workshop."

Delivery:

It was suggested that the innovators--the leaders of the field--should be invited to address counselors face to face. The counselors would read the man's articles as preparation for the session and know that this author has the sanction of his agency. Then, the counselors would receive the innovative message with the extra magic of a human presence and have the opportunity to ask questions.

Discussion:

Miller and Holden at the University of Iowa are doing a study which compares several methods of continuing education, including small group meetings at various intervals--really discussions with or without discussion guides. This bears further investigation.

Method:

What communication method maximizes the probability of change? One state followed up on utilization of one piece of information as it was disseminated successively by article, jazzed-up article, consultant, and workshop. Some utilization began to show up after the consultant stage, but rampant utilization appeared only as a result of the workshop. (This could simply mean that such saturation campagins are necessary to effect utilization.)

AWESOME RESEARCH

The need to dispel the awe aura of research was so unanimously recognized that solutions run like a connecting thread throughout the discussions.

Exchange grants:

In-Service Exchange Grants provide up to $500 and four weeks' time for a counselor to go see an innovative program which interests him, and to talk to the people working on it. Upon his return, the counselor would hopefully implement what he had learned. This procedure establishes personal familiarity with research for the counselor.

Tools:

There ought to be more in-service training in regular staff meetings, more use of visual aids, a course in the appreciation, not the manhandling, of statistics.

Contribution:

One way to make the counselor feel that he is part of the research effort is to explain in detail the importance of each project so that he understands he is making a contribution rather than doing a tedious chore.

COMMUNICATIONS GAP

Washington:

With unfortunate frequency, the people who have influence in Washington are not in touch with the people who are working with clients. There is a communications gap.

Zeroing in:

Counselor needs must be discovered and some at state level must be prepared to find already-completed research or devise new projects to help them.

The practical counselor:

Innovation, being something completely new, comes up from the bottom, from the struggle with day to day problems. If a counselor's method works, it should be handed to a sophisticated researcher for testing. All the ideas cannot come from the top.

Research setting:

Counselors have special interests; they volunteer looking for approval from leadership. If the leadership says go ahead and we will support you, there is one counselor with a new perspective, and a perfect research possibility.

Two-way reward:

Upward communication needs to be encouraged and reimbursed. Let people be creative and know that they will be rewarded. This reward can be helpful for all concerned; for example, since people are so eager to go to workshops, sending them can serve as a reward and incentive, as well as augment the working knowledge of the organization.

Groups and sub-groups:

Certain kinds of materials are best for counselors, other types for supervisory people, administrators, and so on. In addition, there are different groups of councelors: the young ones with new master's degrees, the old hands, the quick and the slow. Each group requires a different approach and special materials.

Moonlighting:

It is time management recognized that professional reading is important enough to be done on work time.

ORGANIZATIONS

Organizations, with their tendency to stability can slow down change and stifle incentive on the lower levels. Sometimes a new man will come in in on tope with "new brooms," then in a year's time, his ideas are the pat ones. Even DVR was purely reactive until recently when it got new blood, money and power. An exodus has loosened up its structure.

Dissension:

"An organization can only take change for so long." "Quite the contrary," came the reply, "when there is no change, an organization is going down hill." A protocol for innovation must be built into the philosophy of an organization."

The philosophy:

The philosophy of an organization, whether it is officially stated or not, plays a big role here. When the essence and fundamental philosophy of an organization are not spelled out, they are not fully understood. Articulation of a philosophy helps determine the character of an organization.

Organizational rigidity:

It was suggested that most rigidity is introduced by people who make structures around themselves to protect them from being anxious. The counter-suggestion, less ignoble, was that people need slack, free time,to think about and effect innovations. Top level people are making decisions on hiring and firing of secretaries because they have not the time to establish lower-level people can use.

THE INNOVATOR

"We have enough research going on; we want to use some of the things other states have tried, but if you do not have a Research Utilization Specialist. you have to stop what you are doing somewhere, to begin to implement what you have done, and the net result may be no improvement."

Further utilization of research would encourage the much sought-for research attitude, "a willingness to innovate, " because effects could be seen.

Who is the innovator? Not a good team man-- a traditional counselor can be a good team member-- and not a conformer who responds well to authority; anything connected with group regulations tends to conservatism. The innovators, it was concluded, are the irritators, the gadflies, the men who are always doing something and driving their supervisors carzy. The organizational nuisances are the innovators.

Synthesis. In one view, the role of the Research Utilization Specialist is a synthesis of research coordinator and innovator.

Facets. The second view gave three facets to the role: basic researcher, operational researcher, and facilitator. The Research Utilization Specialist would also evaluate new proposals and aid in preparation of R & D applications. But in this view, "Research Coordinator" is not the same as "Change Agent." A "Change Agent"would implement results of available research and facilitate use of these results while a "Coordinator" would attempt to initiate new projects. The intersection of these two roles occurs when we develop an organizational understanding of theorectical research so that when completed it would be ready for use by men in the field.

THE FIELD AND THE IVORY TOWER

Of these three spheres of action--basic, applied, facilitative--the applied sphere could be eliminated by bringing basic researchers out of their academic towers and bring them to closer grips with the realities of service operations. This suggestion sparked disagreement; some considered it an inadvisable desertion of theory.

All agreed, however, that relations between researchers and those who hope to use their research need improvement.

GROUP SESSION TWO

RESEARCHABLE PROBLEMS WITHIN THE STATE DVR PROGRAM

"I went to work for an office providing services to the Blind as statistician and thought I was making some progress. Then, after two years, I stopped dead in my tracks. They did not want to know what was wrong. Numbers cannot tell exactly what is wrong, but they can tell you where to start looking. This office did not even want to know."

Systematic examination and communication of findings are necessary to gain knowledge about how agencies really operate. PERT provides a technique for studying the operational characteristics of an agency and evaulating its work.

Counselors are often hesitant to pass on information because they know it will be used against them. They will appear far down on a list and be judged without any understanding of their local situation.

Supervisors could view research in their field as infringement upon the decision making process.

Lack of data is no problem, was the consensus. But operational data can be either too dirty or too cleaned up so someone must audit it as it comes in.

Most people do not want to define goals, much less define them operationally as they must be to be measured. The decision as to what behavior is to be evaluated must be made before a person's performance can be measured.

The justifications demanded for acquisition of federal funds present a problem. Some of the projects people would like to do could be short on immediate results, but have long-term benefits.

The priority of state-wide planning and research recommened was:

1. Management research.
2. New counseling techniques.
3. Coordinate research with other groups: medicine, industry.
4. Day-to-day problems of administration and management.
5. Blue-sky research.

RESEARCHABLE PROBLEMS

1. What is the best way to disseminate information? What is the disseminator's role? What are his obstacles?
2. To what extent is the personality of the counselor a factor in Research Utilization? What makes him an innovative, receptive guy? Can we measure an Innovation Quotient as well as an Intelligence Quotient"
3. How do you modify behavior?
4. How do you group your staff? When

you have grouped them, should you concentrate your attentions on the laggards or the men on the move?

5. How does one get medical reports without delay?

6. In a study of alcoholics, as many of the unaccepted as accepted patients went to work. We tried to pick the best chances. What is the "best" decision criterion for such cases?

7. We do not know houw our clients feel about rehabilitation. We do not know what they want. We do not even listen to what they want from us. What do they feel is happening to them in the rehabilitation process?

See Appendix B for further listing of researchable problems.

APPENDICES

APPENDIX A:

The State Agencies' Role in Research.

APPENDIX B:

Suggested Research Areas for State Agencies.

APPENDIX A

THE STATE AGENCIES'ROLE IN RESEARCH*

In my discussion of the topic which the planning committee asked me to consider, I will not preseume to tell you what state agencies need to do in way of research and vocational rehabilitation. As I see it, the agencies and the various groups with which they interact in conducting their work, will evolve a role which is perceived by the agency leadership as befitting both the objectives of the agencies and its responsibilities to the many groups with which they work and cooperate.

The concept role, as I see it, refers to the configuration or patterns of behavior expected from the role-taker by significant persons or groups in the role-taker's environment would be those individuals or groups who secure services from the agency and other groups, who because of their responsibilities, have certain expectations from the state agency. This discussion will, of course, be confined to the kinds of expectations which have relevance to the topic of state agencies role in vocational rehabilitation research. I will not attempt to try to indicate all the expectations which clients and other groups may have o of the state agency that suggest a research approach for their accomplishment or improvement.

It seems to me that both clients and their families expect the state agency to offer professional services based on a sound body of knowledge and offered to its clients in the most effective manner. From their professional colleagues in rehabilitation centers and their collaborators in efforts to rehabilitate their fellow citizens, we can reasonably expect demands for expertness in appraising vocational potentialities of the psychology of physical disability. Obviously, a good bit of thinking has already been done on some of the problems associated with the expectations I have already listed, but it is also apparent that a good deal of study and investigation needs to be done.

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The university staff who are preparing rehabilitation counselors, are especially interested in having the state agency assume an active role in contributing to the systematic knowledge needed to more effectively serve rehabilitation clients and prepare students for work as rehabilitation counselors. There is also an expectation on the part of the university teachers in this area that they will be stimulated by the research of the state agency be asked to share in the development of research plans within the state agency. It follows that these teachers also hope that the state agency will be interested in working closely with the university in conducting research proposals initiated by the university.

As I see it, the rehabilitation counselor in the state agency has a number of expectancies in his relationshipd with the state office staff of his agency. He looks to them and his supervisor for guidance regarding case work procedures and assistance in the solution of the vocational rehabilitation problems faced by him and his clients. He also looks to the staff or specialized information or knowledge which can only be made available after extended systemtatic study. For example, he needs help in evaluating the effectiveness of certain training facilities or information regarding occupational trends in his state or locality so that he can be guided in his consideration with the client of specific occupational goals. From a first examination of some data we have collected at Iowa, it also appears that he needs help in coping with the tremendous pressures of numbers and quotas which many s state programs now seem to involve. He is extremely eager to be perceived by others as a professional person and seems uncertain about his atstus as a professional person. Some of these needs, it seems to me, are susceptible to a research approach and could be examined and formulated into specific research problems.

It seems to me OVR expects state agencies to make available through an efficient organization, a program of services which meets the unique needs of their states' disabled citizens. How well this is being done is also susceptible to a research approach. As I suggested in our subsequent group discussions, I feel that the state administrative procedures and practices are quite susceptible to systematic study and research.

In thinking about the specific ways in which state agencies become involved in vocational rehabilitation and research, it seems to me that they could function in three sub-roles. Briefly thse would include: 1. innovator and investigator, 2. Cooperator, 3. Consumer. As the innovator and investigator, they could either independently, or with the assistance of university specialists in their state or region, investigate problems which we can expect state agencies to become actively involved in research wise, include: A. program and procedure evaluation, B. personnel selection and evaluation, and C. the translation of daily problems in vocational rehabilitation into systematic studies. Depending upon the internist and personnel resources of the agency, these investigations might be done either independently, in collaboration with, or cooperatively with other agencies and universities. The state agencies role as a cooperator is an important one since they are the major source of client vocational rehabilitation counselor interaction and since they have, or can obtain rather readily, the kinds of information which investigators need. I would certainly agree that state agencies have a responsibility for protecting their clients from research studies which infringe upon their rights as individuals. They also, of course, have a responsibility to protect their counselors and staff from involvement which would unduly distract them from their service mission. On the other hand, it seems to me that the agency has a clear responsibility to make a reasonable effort to cooperate in the conducting of worthwhile vocational rehabilitation research projects.

As a consumer of the research product, the state agency has a responsibility for utilizing and evoking the best management and rehabilitation counseling procedures in accordance with the research information which is available. They also have a responsibility for communicating research findings to their staff through in-service training and other procedures such as training bulletins.

As I see it, the key need for the state agency in its role in vocational rehabilitation research, is for each agency to accept the research approach as a working assumption of their program. By this I mean that the agency staff think of systematic study and investigation as the most fruitful and sound way of dealing with the problems which arise in conducting the affairs of the agency. As I have already suggested, this includes not only more effective means for selecting counselors or increased knowledge about the relationships between client dimensions and rehabilitation outcomes but also the many administrative practices and procedures. This matter of adopting the research approach is a matter involving attitude and values as well as stated policy. Research activities need to be regarded as necessary components of a strong program for vocational rehabilitation. To reject involvement in research or become involved while regarding it as an interference with the "real" work of the agency, does not take cognizance of the responsibility of the agency in this activity. It also fails to consider the contribution which research can be expected to make to the service program of the agency.

If the state agency is to assume a more active role in rehabilitation research, certainly and important first step would be to assign some one individual on the state staff, both the responsibility and time to attend tc the task of initiating, cooperating, and utilizing research information.

A reasonable question which may be raised regarding state agency involvement in research could be "Where do we get the qualified advisors we need to undertake such research?" Certainly the regional research center approach of the University of Minnesota is one important possibility. It seems to me that every state agency has within its own state, colleges and universities staffed by capable people, in a wide range of ideas, who could be of considerable help in planning studies in management, personnel selection, training techniques, occupational information, and the like.

I believe that the state agencies have a vested interest in the types of problems which are studies and the quality of research which is undertaken in the field of vocational rehabilitation. I think that they have an obligation to the wider profession of counseling to contribute to the pool of knowledges and skills from which all counselors draw. In the process of doing so, it seems very likely to me that the state agency personnel will find increased satisfaction with themselves as professional workers.

CHECKLIST OF QUESTIONS TO BE ASKED ABOUT A RESEARCH PROPOSAL

1. What is the problem?

   a. Is it clearly stated?

   b. Is it focused enough to facilitate efficient work (i.e., are hypotheses directly testable)?

2. What are the underlying objectives?

   a. Is the problem clearly related to the objectives?

3. What is the significance of the proposed research?

   a. How does it tie in with theory?

   b. What are its implications for application?

4. Has the relevant literature been adequately surveyed?

   a. Is the research adequately related to other people's work on the same or similar topics?

5. Are the concepts and variables adequately defined (theoretically and operationally)?

6. Is the design adequate?

   a. Does it meet formal standards for consistency, power, and efficiency?

   b. Is it appropriate to the problem and the objectives?

   c. Will negative results be meaningful?

   d. Are possibly misleading and confounding variables controlled?

   e. How are the independent and dependent variables measured or specified?

7. What instruments or techniques will be used to gather data?

   a. Are the reliabilities and validities of these techniques well established?

8. Is the sampling of subjects adequately planned for?

   a. Is the population (to which generalizations are to be aimed) specified?

   b. Is there a specific and acceptable method of drawing a sample from this population?

9. Is the sampling of objects (or situations) adequately planned for?

   a. To what population of objects (situations) will generalization be aimed?

   b. Is there a specific and acceptable method of drawing a sample from this population?

10. What is the setting in which data will be gathered?
    a. Is it feasible and practical to carry out the research plan in this setting?
    b. Is the cooperation of the necessary persons obtainable?
11. How are the data to be analyzed?
    a. What techniques of "data reduction" are contemplated?
    b. Are methods specified for analyzing data qualitatively?
    c. Are methods specified for analyzing data quantitatively?
12. In the light of available resources, how feasible is the design?
    a. What compromises must be made in translating an idealized research design into a practical research design?
    b. What limitations or generalizations will result?
    c. What will be needed in terms of time, money, personnel, and facilities?

Holt, R.R., "Experimental methods in clinical psychology. In B. B. Wolman (Ed.), Handbook of clinical psychology. New York: McGraw-Hill, 1965.

APPENDIX B

SUGGESTED RESEARCH AREAS

ALABAMA:

1. Present Situation: There is a large rural population of poorly educated, physically handicapped adults in Alabama who have no job experience other than unskilled manual labor (tenant farming, timber work, etc.), and who, as a consequence, are long-term recipients of welfare assistance.

   Problem: How can a rehabilitation program be designed which will appeal to this population initially to the point where they will enter it, and which is attractive and practical enough so that they will complete it?

2. Present Situation: Within most counties in Alabama, a high school dropout who falls in the category of educatable mentally retarded may be referred to the Job Corps (through the State Employment Office), the Neighborhood Youth Corps (through the OEO), or a Community Workshop (through VRS). Only a limited liaison with, and knowledge of, the other programs exist within one of these programs.

   Problem: Is this existing method of handling these drop-outs serving the needs of the individual in the best way? How can existing guidelines or procedures be changed to better insure that the individual is not used or forgotten?

3. What happens to persons referred to Vocational Rehabilitation Services, but not accepted?

4. How to develop a program of behavior modification in a rehabilitation facility setting.

5. Which professional persons in a community would have something to offer a rehabilitation facility as it relates to program structure, program development, and program procedures and techniques?

6. What sociological information would be of value to a rehabilitation counselor as it relates to providing vocational rehabilitation services to persons who come from a lower socio-economic background?

7. How could the Vocational Rehabilitation Service be meaningful to clients with emotional problems but who are not verbal enough to profit from the unsual psychotherapy?

8. What in-service training programs would meet the needs of rehabilitation counselors as it relates to developing an understanding of learning theory, and human dynamics in general?

9. Partially disabled middle-aged and older people who will not benefit from physical restoration services nor training for special jobs and who are not eligible for any other kind of public assistance.

10. The ever-increasing amount of paper work in connection with carrying out the rehabilitation program. (This problem, if not solved, may also reach beyond the rehabilitation of disabled people and in time become a problem for the paper industry.)

11. I would like to see some research done on the rate of success or failure in providing vocational training for emotionally disturbed people as opposed to placing them in jobs without first training.

12. I feel that a project should be instituted with high school students at the ninth-grade level, whereby, if they are eligible, we could activate, plan a program, and fund it.

SOUTH CAROLINA:

1. General understanding of an reaction to overall Vocational Rehabilitation Program by general practioners (that group of the medical profession who provide this service of completing general medical examinations).
2. General acceptance and involvement of industrial personnel administration in efforts being made by Vocational Rehabilitation to accomplish suitable job placements for handicapped people.
3. Actual contributing factors that hinder job placements of those handicapped by epilepsy with emphasis on objective prohibiting factors.
4. Post-closure disposition or status of those persons who are closed in 28 and 30, also, those are closed from 02 for failure to follow through. (DO they become wards of public charity - if so, what kind? Or do they seek private care and attention that might be indicated).
5. What criteria are generally observed in that group usually classified as terminal work-shop employees?
6. Some effective method of getting medical reports from the doctors without delay.
7. Research in the necessity of numerous trips to the Heart Clinic following surgery.
8. Research for possibility of our State Agency to consider involving other State Agencies in the possible planning of some facets of our program.

I feel that this would help them to feel that they too have a part in the total processes of rehabilitating a handicapped person which is most important.

9. I would like to know what other states are doing about the problem of obtaining medication for State Hospital returnees to the home community.

10. I would like to know whether or not any states have a program whereby a rehabilitation client can enter a state hospital setting and remain for an indefinite period of time and follow through with an intensive program.

11. Incidence of overprotectiveness by parents in mentally retarded children.

12. The effectiveness of VR interviewing and attemping to work with denied OASI applicants.

13. The effectiveness (other than socialibility) of VR's influence and participation in public school's special education projects for mentally retarded high school students.

14. The effectiveness of conductingmmore training conferences each year with fewer counselors attending each session order to facilitate closer interaction among counselors and instructors.

15. Would (frequent) distribution of VR literature to agencies and physicians result in more valid referrals? This would yield less wasted counselor time and less wasted VR funds.

16. Could the secretaries' morale, attitude and efficiency be improved to a significant degree by giving them personal recognition from the Columbia Office for a job well done?

17. The effectiveness of "placing" mentally retarded clients who have undergone VR evaluation at Whitten

Village compared with those who did not undergo such an evaluation. (The results could be an effective "selling point.")

18. The overall effect on the VR program if the Dept. flatly refused to accept any dental cases in any way, manner, shape or form for a period of at least one year.

19. Motivational factors of Social Security Beneficiaries. The correlation between increasing anxiety reactions as a handicap to employment and older textile workers. Any attitudes of of Social Security or Disability Beneficiaries towards VR services.

20. NRA Solicitations. The counselors would like to know what is the state-wide feeling of other counselors regarding having to solicit memberships in NRA and in actually being assigned points in the form of quota. They are especially interested in the feeling regarding this since we are primarily obtaining memberships from physicians who are already performing services for Rehabilitation at cost considerably below their private fees.

21. Counselors also would like to have some research done regarding the effect of having some set goals for plans and closures each year. They are wondering how other states have progressed who have an open-ended system whereby each person does the best job he can in serving handicapped people rather than knowing that he is expected to do a certain number of plans and closures.

22. Counselors stated that they have been given information that graduate training would be available through State VR, that they would have an opportunity to work toward an advanced degree while employed by our agency; however, each time a course has been offered in the vicinity or

nearby college, after inquiring they learn that they will have to pay the cost and that there is no money available through our training budget. They would like a study made considering other states and how they are offering training to their counselors. Some of them are familiar already with how Georgia handles theirs.

23. Counselors would like a cost comparison made between costs of hearing aids in South Carolina and those in other states. It is our feeling that we are paying too much for these appliances and some states set a maximum fee that can be paid for any hearing aid and the dealers are under contract to accept a particular fee.

24. We have noticed particularly this year that many of our retarded clients have been placed on five or six jobs without sticking. It would seem that it would be interesting to do a study regarding closed mentally retarded cases to determine how many are on the same job or even still employed on any job.